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Integration of language arts skill development into secondary school family and consumer sciences curriculum: a causal model for predicting teacher practices

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Integration of language arts skill development into secondary school family and consumer sciences curriculum: A causal model for predicting teacher practices

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DEDICATION

Dedicated to my beloved parents, Martha Naliaka Wasike and the late Patrick Wasike Laleti . Thank you for everything.

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ABSTRACT

The purposes of this study were to: (1) provide baseline information about the practices and attitudes of family and consumer sciences secondary school teachers regarding the integration of language arts skill development into family and consumer sciences curriculum, (2) identify variables that influence family and consumer sciences secondary school teachers' practices of integrating language arts skill development into their teaching, and (3) describe relationships among these variables. The innovation theory formed the conceptual framework for the study.

A sample of 192 teachers was randomly drawn from a population of 520 secondary school family and consumer sciences teachers. Data were obtained using a mail survey from 135 teachers who responded (response rate was 72%). Data were analyzed using SPSS Version 4.0 and LISREL Version 7.0. Analysis included descriptive statistics, correlational statistics, and path analysis.

Teachers had positive attitudes towards integration of language skill development into family and consumer sciences curriculum although they practiced integration to a limited extent. Language arts skill development was especially limited. Scheduling and lack of planning time were perceived as major barriers to subject integration; the support system was positive and resources were not perceived to be major limitations. Level of education and previous subject integration experience emerged as major background characteristics indirectly affecting language arts skill development practices. All the variables in the path model influenced language arts skill development practices indirectly through

general integration practices indicating that teachers need to have knowledge about integration methodology for effective practice of integration.

Implications of this study are that subject integration is approached best as a school improvement effort because it involves many aspects that are beyond the teacher's control. An environment that encourages teacher collaboration and provides support for curriculum integration is important. Implications for family and consumer sciences teacher education are that pre-service teachers should be educated on the use of integrative approaches in teaching. Teacher educators should use integrative approaches in their teaching to provide a model for teachers and to reinforce the integrative nature of the field of family and consumer sciences.

CHAPTER 1: INTRODUCTION

Rationale

Great concern exists that many individuals today do not possess language skills required for basic literacy. Other individuals possess moderate levels of language skills but lack the skill levels needed for employability, social adaptation, and productivity. Even individuals with adequate skills for living will find job options limited in a workplace that requires increasingly high levels of language skills to advance in position and income ("Integration of mathematics, science, and language arts", 1991).

The American society is becoming increasingly complex. The ability to use oral and written information is essential for the success of the individual, the workplace, and the society. Language skills are essential to the lifelong learning process required to adapt and prosper in today's complex society. Language arts encompass the concepts and strategies essential to competence in language skills. Teachers in all subject matter areas need to take leadership in preparing their students with language skills for more effective functioning in the society.

Vocational education has prepared students to enter the workplace after high school and has placed less emphasis on the acquisition of academic skills such as English. New program directions in vocational education are being guided by the Carl D. Perkins Vocational and Applied Technical Education Act, Public Law 100-392 of 1990. The Act has given vocational education a challenge and an opportunity to reform vocational education so that it remains a powerful form of preparation for employment in a period when skill demands are changing (Grubb, 1991; Wilcox, 1991). As part of the challenge to reform, the law provides that

federal money be spent on programs that integrate academic and vocational education. Because language skills are essential for full and successful participation in modern society, language arts is a critical area of learning that needs to be integrated into in the total school curriculum.

Research about integration of academic skills with vocational content has mainly focused on administrators with a purpose of gaining a large picture of the status of vocational education in relation to integration (Elrod, 1987). Research that is directly linked to the teachers, who are the final implementers of any curriculum change is needed. Because in-service education is frequently the vehicle for initiating new programs, its effectiveness becomes a key factor in the efforts to bring about change in education. Quite often, however, a brief in-service workshop can introduce only initial stages of an innovation. This may not be enough to ensure adoption of an innovation. If staff development is to be effective, it must be related to the teachers' classroom behaviors and be based on a thorough needs assessment. Such needs assessments must look beyond individual teachers' efforts and view the total school context that affects change (Lagone, Cross and Combs, 1987).

Family and consumer sciences has a vital role to play in the effort of curriculum integration because it contributes much to the mastery of basic skills, including language skills, by facilitating the use of these skills in daily living (Home Economics Education Coalition, 1985). When family and consumer sciences instruction is focused on the development of language skills, there are positive results. A study in Florida showed that students who were given an individualized self-concept approach to reading instruction in family and consumer sciences showed improvement in both reading and family and consumer sciences

(Comerford, 1980). Ledwig, Robertson, Boschung and Strickland (1987), found that students made greater gains in knowledge of basic skills when exposed to integrated curriculum.

While the overriding goal of family and consumer sciences is not to teach basic academic skills, such skills are essential to students in accomplishing family and consumer sciences competencies (Williams & Parkhurst, 1988). Academic skills are best learned when taught in the context of daily living. Efforts have been made within the profession of family and consumer sciences to integrate family and consumer sciences and academic courses. Several examples of curriculum have been developed that integrate mathematics and family and consumer sciences (Hall and Williams, 1989; Parkhurst, 1986; Williams & Parkhurst, 1988). Others have integrated reading and family and consumer sciences (Hall & Sproles, 1988). There are also several examples of programs integrating science and family and consumer sciences (Moss, 1989; Smith & Hausafus, 1987; Smith & Hausafus, 1988), communication and family and consumer sciences (Thompson & Sproles, 1989), and social studies and family and consumer sciences (Van Buren, 1989). Texas Tech University has developed a curriculum that integrates mathematics, science, and language arts with family and consumer sciences ("Integration of mathematics, science, and language arts", 1991). Societal changes place constant pressure on educators to bring about change in order to maintain the relevance and responsiveness of American schools.

Family and consumer sciences teachers are called upon to respond to changes in family structure and other changes in society (Lagone, Cross, & Combs, 1987). One such challenge is the integration of language skills into family and consumer sciences content. Many states, universities, and local school systems

have responded to this challenge by planning programs, writing curricula, and providing in-service education to teachers. In spite of advances in the development of curriculum materials which help teachers teach language skills in family and consumer sciences, little research has been completed which provides direction for these efforts (Hall & Sproles, 1988).

Integration of language arts skill development is not unusual in family and consumer sciences. (Hallman, 1988). However, it can be considered as an innovation because of the new emphasis that is being placed on it currently. Innovation is often used to indicate something newly created or produced and is frequently confused with invention. Inventions are innovations since they are something new, but innovations need not be inventions. They may be long-established ideas, products or practices which are found to have new applications and may then be regarded as new by some people (Spence, 1994). The theory of innovation has been used in many studies to explain the process of innovation adoption (Rogers, 1983). The innovation theory provides a good basis for identifying variables that influence the adoption of innovations and explaining the patterns of interaction among these variables (Rogers, 1983; Spence, 1994). The innovation theory therefore provides a suitable conceptual framework for this study of which the purposes were to:

(1) provide baseline information about the practices and attitudes of family and consumer sciences secondary school teachers regarding the integration of language arts skill development into family and consumer sciences curriculum,

(2) identify variables that influence family and consumer sciences secondary school teachers' practices of integrating language arts skill development into their teaching, and,

(3) describe relationships among these variables.

In this study, the innovation is the integration of language arts skill development into family and consumer sciences curriculum. There is need to understand the factors that affect adoption of new curriculum approaches and how these factors relate and interact. Efforts to make changes in the curriculum can then be more successful. Planning for innovation is very important. Evidence suggests that lack of careful planning can result in waste of scarce resources and limited success of the innovation (Havelock & Huberman, 1977). This study seeks to provide information that explains some factors affecting adoption of the integration of language arts skill development into family and consumer sciences curriculum.

The information from this study will be useful in guiding the process of developing in-service education programs for teachers and for the process of developing curriculum that integrates language arts skill development into family and consumer sciences curriculum. The study also has implications for teacher education in the field of family and consumer sciences. Pre-service and in-service teachers should be educated on the use of integrative approaches so that they can apply them in their teaching.

This study was carried out as part of the needs assessment procedure for a parenting curriculum project . The project was funded by the Iowa Department of Education and the Department of Family and Consumer Sciences Education & Studies at Iowa State University.

Definitions

Family and consumer sciences: The field of family and consumer sciences was defined as home economics in the early 1900's as being in its most comprehensive sense the study of the laws and conditions, principles, and ideals which are concerned on one hand with man's immediate physical environment and on the other hand with his nature as a human being, and is the study specially of the relation between the two factors. It is a philosophical subject, something to connect and bind together into a consistent whole, the pieces of knowledge that are at present unrelated. (Hawthorne, 1984, p. 3)

Family and consumer sciences is the new name for home economics in the United States of America. The name change was recommended in October, 1993 by participants at a Scottsdale, Arizona conference. The new name was adopted as the official name of the major professional association in June, 1994, at the annual meeting of the association which is now known as the American Association of Family and Consumer Sciences ("The conceptual framework", 1994). For this reason, the term family and consumer sciences is widely used in this document. The term home economics is also used when the discussion relates to the period of time in history when this was the accepted term. The researcher also notes that the instrument for this study was developed before the name change was officially approved and, therefore, uses the term home economics.

Language arts: Language arts comprises a body of knowledge about language as well as the basic skills of language processing and communication. (Tiedt, 1983, p. 5)

Subject integration: Subject integration is the process of combining content from different subjects to make a student's learning experience a more inclusive whole. (Tenpas, 1973, p. 3)

Assumptions and Limitations

The following assumptions were made in this study: The respondents completed the questionnaire accurately, the information provided by the respondents is representative of secondary school family and consumer sciences teachers in Iowa, a need exists to determine the factors that affect family and consumer sciences teachers practices regarding the integration of language arts skill development into family and consumer sciences curriculum, and secondary school family and consumer sciences teachers are willing and able respondents.

There are two limitations in the use of the results of this study. The findings may not be generalized to other states, nor may they be generalized teachers other than those in family and consumer sciences.

CHAPTER 2: REVIEW OF LITERATURE

The main purpose of this study is to describe the factors that affect teacher practice regarding the integration of language arts skill development into family and consumer sciences content in secondary schools. The literature relevant to the study is summarized in this chapter and includes four sections which are presented in the following order:

1. Integration of academic and vocational education
2. The nature of family and consumer sciences
3. Language arts in the content areas
4. Innovation theory

Integration of Academic and Vocational Education

Integration of academic and vocational education is defined in several ways using various terms. Interdisciplinary education, applied basics, and applied academics have all been used to describe the idea. Basically, integration is a broad concept which here entails combining the concepts, principles, and content of academic disciplines with the content of vocational areas.

Efforts to integrate curriculum have a long history and can be traced to John Dewey and the progressive education movement (Craig, 1987). Philosophical and psychological antecedents of curriculum integration can be traced back to the writings of Herbert Spencer in the 1800s (Vars, 1991). The progressive education movement, which included a strong emphasis on student centered integrative approaches to education, was one of the most important efforts of integration in the 1930s and 1940s (Vars, 1972). The evolving concept of the core curriculum was

tested in the famous eight year study of progressive education, when 80 comparative studies on the effectiveness of integrative programs were carried out (National Association for Core Curriculum, 1984). In nearly every instance, students in various types of integrative programs performed as well or better on standardized achievement tests than students enrolled in the traditional separate subject programs.

More recently, the publication of A Nation at Risk by the Commission of Excellence in Education in 1983 has had a great impact on educators and the public (Adelman, 1989; Roegge, 1992). The report is a summary of forty commission papers, six public hearings, and three symposia (Goldberg & Harvey, 1983). Five major recommendations were made in A Nation at Risk: (1) High school graduation requirements need to be upgraded to include the five new basics of English, mathematics, social studies, science, and computer science; (2) Colleges and universities need to enforce stricter admission requirements; (3) More time must be available for instruction in the new basics by increasing the length of the school day or year; (4) The preparation of teachers needs to be improved and the attractiveness of the profession increased; and (5) Citizens need to offer financial support and hold elected officers and educators responsible for implementing these recommendations (The National Commission on Excellence in Education, 1983). Several other factors in the past four decades have directed focus on the need to ensure that students in American schools develop strong academic skills (Sarkees-Wircenski & West, 1990). The factors that have led to this focus are described by Pritz and Clowe, (1987) as:

- A Nation at Risk released in 1983 by the National Commission on Excellence in Education stressed a need for renewed emphasis on basic skills instruction and increased academic performance;
- Increasing public concern regarding low academic outcomes of high school graduates and growing demand for accountability from the public school curricula;
- The increase in the academic courses necessary for graduation in many states;
- Demand by business and industry for workers who are better prepared with a strong foundation of academic skills;
- Advances in technology that call for higher levels of math, reading, communication, and thinking skills.

With the passage of the Carl D. Perkins Vocational Education Act of 1984, funding was made available for strengthening academic foundations of vocational education. The legislative statement stresses the "practical application" of academic skills not necessarily more academics (Hall & Sproles, 1988). The integration of academic and vocational education is an educational reform supported by the policy makers of the Carl Perkins amendments. The amendments provide federal money for programs that integrate academic and vocational education through coherent sequences of courses so that students achieve both academic and occupational skills (Section 235). Sub-rule 12.5 of the Iowa Vocational Education Standards and Requirements also calls for vocational education programs that, along with many other requirements, reinforce basic academic skills.

The Carl D. Perkins Vocational and Applied Education Act of 1990 marks the largest ever federal funding authorization for vocational education. The

amendments authorize the United States government to spend up to $1.6 billion a year for state and local programs that teach the "skill competencies necessary to work in an advanced technological society" (Wilcox, 1991). The new Perkins Act is designed to help vocational education lead by

- channeling federal money to programs that integrate academic and vocational education,
- targeting money more carefully toward programs that produce results,
- emphasizing programs that serve the poor and otherwise disadvantaged people,
- easing regulatory burdens by pushing authority down to the local level (Jennings, 1991).

Curriculum integration can be implemented in a variety of ways and to varying degrees depending on individual school and classroom settings. Several models of integration have been described in literature.

Conceptualizations of integration

As many as nine approaches to integration have been identified in the literature (Grubb & Stasz, 1992; Grubb 1991). The numerous approaches to integration can be summarized in various ways. Schmidt, Beeken, and Jennings (1992) identified a way of classifying the integration approaches. The "basic infusion" model involves simply incorporating academic content into vocational courses. A higher level of infusion is the modification of the vocational curriculum through the efforts of academic departments. This approach is called "advanced infusion". Other models identified are applied academics, teacher collaboration,

and restructured schools. Based on this classification, the following four major models are used in this study:

1. Infusion model
2. Collaboration model
3. Application Model
4. Institutional restructuring model.

Infusion model This model has two major types:

a. Incorporating more academic content in vocational courses In this type, the vocational teacher modifies vocational courses to include more academic content. Benefits include the potential of increasing academic capacities of the students. The courses are primarily taught by the vocational teacher.

b. Making academic courses more vocationally relevant This type involves academic instructors in modifying academic courses or adopting new courses to include more vocational content. The courses are primarily taught by the academic teacher.

Collaboration model In this model, academic instructors cooperate with vocational instructors in curriculum development and/or teaching to include more academic content in vocational courses or more vocational content in academic courses. Teacher collaboration can vary from consultation to planning and teaching courses together and to aligning both the academic and vocational courses. Two types of teacher collaboration follow:

a. Academic and vocational teachers work together to incorporate academic content in vocational education In this type academic teachers are assigned the

responsibility of enhancing the academic components of vocational programs. Academic teachers teach applied academic courses modified for particular occupational areas, teach individual lessons or modules for vocational students, help vocational instructors to develop their own academic exercises, or pull students out of vocational classes to work on academic competencies. The crucial element in this model is that academic and vocational teachers collaborate in modifying vocational programs.

b. Curricular alignment (modifying both academic and vocational areas) This type combines elements from other models by including more occupationally relevant content in academic courses and more academic content in vocational courses and then linking the two. This may happen when two or more teachers from the academic and vocational areas coordinate the content they teach at a particular time. This approach is referred to as horizontal alignment. In other cases, this practice creates sequences of academic and vocational courses that reinforce one another; this practice is referred to as vertical alignment. Alignment can take place at any level; it may involve only two teachers (one academic and one vocational) or it may involve all the teachers in a school.

Application model In this model, the focus is on using real life experiences to teach both academic and vocational skills. There is no preference nor distinction between academic or vocational subjects. This approach has a continuum which may range from having students do application types of projects to abandoning subject loyalties. Listed below are two common approaches in the application model:

a. The senior project These projects usually require a research paper, development of a physical project, or an oral presentation. Such experiences provide the students with an opportunity to integrate their learning from different courses, including that which is learned in vocationally oriented classes and in academically oriented classes.

b. Experiential approach In this approach, there is no distinction between or preference for any specific subject. There are really no subjects at all, rather there are only students (and their teachers) and their needs, questions, and concerns about the world in which they live. Facts and knowledge from different subject areas become relevant to the curriculum where and when they can help students make sense of the world. Schubert (1986) describes several orientations to content. One way in which content can be viewed is as a learning experience. The pursuit of knowledge, skills, values, and appreciations that fulfill these deeper needs and interests is viewed as the best learning experience for the student. This approach enables the student to apply skills from a variety of areas to a real life situation. The student is the center of integration.

Beane (1992), in support of this approach to integration, states that integration is a fundamental educational process that parallels the way we learn about the real world. He states that people have more interest in that which answers their questions about life, while essentially disregarding the rest of the information. He views students as being naturally integrative.

Institutional restructuring model In this model, major institutional adjustments are made to facilitate integration of subjects. There are three major examples of this model.

a. The academy example Academies are schools-within-schools that typically include teachers of academic subjects such as English, mathematics, and science, and a teacher of vocational subjects such as agriculture or family and consumer sciences. Because the teachers stay with the same students for two or three years, the possibilities for both horizontal and vertical alignment are increased. Academies also establish close relationships with particular businesses operating in an occupational area. These relationships provide students with additional motivation, mentors, internships, and opportunities.

b. Occupational high schools and magnet schools In some communities, occupational high schools focused on a cluster of occupations exist, and in other communities, occupationally-oriented magnet schools have been established. These institutions provide an obvious effort to integrate academic and vocational education while emphasizing the occupational content of the coursework.

c. Occupational clusters, career paths, and occupational majors In this example, departments are organized around occupational clusters rather than as academic and vocational departments. In other cases, conventional departments are maintained, but students and teachers are organized in "career paths" or elect "occupational majors". These create a matrix structure in which teachers participate in both department discussions about particular academic and vocational courses and in occupational clusters which can develop coherent sequences of courses and align courses within each structure.

Advantages and limitations of integration

Clearly, approaches to integration vary considerably and range from marginal changes in existing courses to thorough reforms reshaping an entire school. An

integrated approach to curriculum has several advantages and a few limitations. The advantages as described by numerous authors include the following (Campbell-Thrane, Manning, O'Keafor, & Williams, 1983; Ledwig, Robertson, Boschung, & Strickland, 1987; Mills & Pollack, 1993; Sarkees-Wircenski & West, 1990; Vars, 1972):

- teachers are able to work with a group of students sharing similar career interests;
- teachers respond knowledgeably to students' vocational interests which link to basic skills, and teachers have frequent opportunities to develop that linkage;
- teachers have a need to develop stronger relationships with colleagues in the same content area and in other disciplines as they work together in the process of integration;
- more holistic instructional plans can be developed in which both vocational and basic skills are taught by the same teacher;
- teachers see relationships between their subjects and other subjects;
- students learn new basic skills based on practical applications in a context to which they can easily relate and thus promotes mastery of these skills;
- students gain new perspectives from teachers in other areas;
- integration helps students make sense of the multitude of life experiences.

The limitations of integration include the following:

- teachers help students of varying skill levels, and thus spend less time on students with special needs;
- teachers balance time between two content responsibilities which creates problems when they are not provided extra time;

- additional education is needed when teachers teach new content areas and they may not have resources of time or money to acquire the necessary education;
- teachers may not be able to handle the additional responsibilities created by integration because of lack of time or unsuitable scheduling.

Integration flourishes in a supportive atmosphere (Bodilly, Ramsey, Stasz, & Eden, 1992). Administrative support is crucial for the development and implementation of integrated curriculum (Sarkees-Wircenski and West, 1990). This support can take a variety of forms including the following, as proposed by the National Center for Research in Vocational Education (1986):

- Establishing an administrative structure that encourages change
- Fostering school-wide commitment and high expectations for success through mutual agreement among teachers that integrated curricula is a priority
- Setting a comfortable climate for personnel to collaborate and experiment with new teaching methods
- Fostering commitment and high expectations by supporting teachers, establishing accountability measures, and developing an ongoing system of communication and sharing among the teachers.

Although integration of academic skills into vocational areas has many benefits, it is not easy to achieve (Barbieri & Wircenski, 1990). The process is often complicated and affected by a number of variables including the local educational philosophy, administrative support services, interaction level between vocational and general academic personnel, and financial resources (Sarkees-Wircenski & West, 1990). Integration can however be achieved with a co-ordinated working relationship between vocational education personnel and their academic

counterparts (Schmidt, 1995). The continuing challenge is to design curricula that simultaneously take into account the content of the different subjects and the needs of the learner and the society (Vars, 1991). A practical approach must be taken in determining how the integration process would be implemented.

The Nature of Family and Consumer Sciences

Family and consumer sciences has continued to persist, expand and change gradually in spite of image problems and other problems relating to fragmentation of the profession. The negative image of family and consumer sciences results from the belief that it is a cooking and sewing profession (Istre & Self, 1990). As a result, family and consumer sciences educators are increasingly concerned that the field is not understood or valued by other educators (Thomas, 1985). Presently, there are major efforts to improve the image of family and consumer sciences. One major step has been to change the name of the profession to reflect better the scope of the field. There are also efforts to define and explain the field better to members and the general public. Family and consumer sciences serves a diverse audience and has evolved with changes in the home environments and the quality of life (Hughes, Kister, & Smith, 1985). Family and consumer sciences has gradually expanded to include the workplace and the community (Hargrove, 1988; Hughes, Kister, & Smith, 1985; Thomas & Arcus, 1988).

Family and consumer sciences is the name for home economics now used in the United States of America. The name change was recommended in October, 1993 by participants at a Scottsdale Arizona conference. The American Home Economics Association officially changed its name to the American Association of Family and Consumer Sciences in the June, 1994 annual meeting ("The conceptual

framework", 1994). A conceptual framework for the twenty-first century was suggested. In this framework, the unifying focus of the profession is the use of an integrative approach to the functional relationships among individuals and families, and the communities and environments in which they function. The framework clearly defines the areas in which the profession should take leadership, the major concerns of the profession, the planning assumptions of the profession, professional practice, and the outcomes of professional practice. The name change and resulting conceptual framework of the profession are major landmarks in the development of family and consumer sciences and are a major step to improving the image of the profession.

Family and consumer sciences is a field of study that has been in existence for about 100 years. Hawthorne (1984), however, states that this field of study did not begin in 1909. The roots of family and consumer sciences evolved much earlier. Indeed, a major forerunner of family and consumer sciences was Sir Francis Bacon who believed that a relationship existed between knowledge and practical activities, and that knowledge should be pursued for the purpose of helping individuals to improve their environment. The work of Benjamin Thompson, also known as Count Rumford brought Bacon's ideas to play through scientific experimentation. Catherine Beecher's book, The Domestic Economy, which addressed the issues related to the home, was published in 1841 when there was need for a profession that addressed directly the needs of families. A group of enlightened scholars recognized this need and officially created such a field of study (Larson, 1990). Family and consumer sciences content and curriculum have continued to be influenced by social, political, economic, and technological changes (Brown, 1984; Green, 1989; Thomas and Arcus, 1988).

Family and consumer sciences was officially defined in the early 1900's as home economics. The question of defining family and consumer sciences lies in the uniqueness of this area of study. The definition proposed at the 1902 Lake Placid Conferences was:

> home economics, in its most comprehensive sense is the study of laws, conditions, principles, and ideals which are concerned, on one hand with man's immediate physical environment , and on the other hand with his nature as a social being, and is the study specially of the relation between the two factors. It is a philosophical subject, something to connect and bind together into a consistent whole, the pieces of knowledge at present unrelated (Hawthorne, 1984, p. 3)

The definition has gained increasing relevance with time as the inter-relatedness of subject matter areas has been recognized. As early as the 1920s, Caroline Hunt stated that home economists should not consider home economics as an isolated problem, but as a part of the whole social complication (East, 1982). The mission of the field as suggested by Brown and Paolucci (1979) is

> to enable families, both as individual units and as a social institution, to build and maintain systems of action which lead (1) to maturing in individual self-formation and (2) to enlightened co-operative participation in the critique and formulation of social goals and the means of accomplishing them. (p. 23)

To fulfill this mission, professionals engage in the provision of services to families. These services involve the solution to complex family problems related to unique situations and call for application of knowledge and skills from a variety of fields and in the context of rapidly changing societal conditions. Since families are affected by a wide range of developments and changes in the society, the development of the profession was influenced by numerous social, political, economic, and technological changes that occurred and impinged on the family in the early 1900's (Byrd, 1990). Several federal acts have influenced the

development of family and consumer sciences to what it is today. Craig (1945) summarized some of the earlier federal Acts that had impact on family and consumer sciences.

The 1862 Morrill Land Grant Act provided funding for higher learning institutions devoted to mechanical and industrial arts. In 1887, the Hatch Bill provided for the creation of agricultural experiment stations in connection with the colleges established in 1862. The Smith-Lever Act of 1914 provided funds for carrying on extension work in home economics and agriculture to persons not in the agricultural colleges. The 1917 Smith-Hughes Act provided funds to promote vocational education in agriculture, home economics and the trades. This legislation was a major force in presenting home economics as a vocational area rather than a general education area.

The Purnell Bill authorized a more complete endowment for agricultural experiment stations, thus making funds available for home economics research, a phase of family and consumer sciences that was little developed up to this time. In 1929, the George-Reed Act provided funds for expansion and development of home economics, especially for state supervisors. The George-Deen Act of 1937 provided funds for adult education in homemaking, trades, and agriculture in rural and urban communities.

More recently, the Carl D. Perkins Vocational Education Act of 1984 provided funding for strengthening academic foundations of vocational education, which included home economics. The 1990 amendments to the Carl D. Perkins Act provided the largest ever federal authorization for vocational education. These developments have led to the present emphasis of integrating academic skills into home economic content in secondary schools.

It is clear that these various legislative acts have had a major influence on the direction that family and consumer sciences has taken. The forces that have shaped family and consumer sciences to its present image have led to major advances, while creating limitations, because the integrative nature of the field has almost been lost along the way. The new move to integrate academic skills into family and consumer sciences could encourage family and consumer scientists to pursue a more integrated field. Marjorie Brown criticized professionals in this field of study for allowing the profession to get on bandwagons. She pointed out the lack of reflection as a cause of many of the present problems faced by the profession. She stated that there is need to take risks and change (Brown, 1984). Professionals need to recognize the role of philosophy as a force for reason in the development and use of concepts in critical examination of existing beliefs, views, norms for action, and social conditions (Brown, 1982). Therefore, as the field of family and consumer sciences moves towards a more integrative approach, there is need for deep reflection so that its content is not lost to other areas, but instead, be enhanced through the positive aspects of curriculum integration. This can be achieved by focusing on the philosophy and mission of family and consumer sciences.

Family and Consumer Sciences and Subject Integration

The uniqueness of family and consumer sciences is in its integrative nature. This field of study has been described as a philosophical subject, something to connect and bind together into a consistent whole pieces of knowledge at present unrelated (Paolucci, 1980). Many authors have pointed out that family and consumer sciences is integrative and should adopt an interdisciplinary approach,

both within the field itself and with other fields. Brown (1984) states that the subject matter of the field should be interdisciplinary, including history, literature, and social and natural sciences. This view is shared by Deacon (1987), who emphasizes the importance of a unified field, as well as Hawthorne (1983), McGrath (1968), Horn (1981), Paolucci (1980) and Istre & Self (1990).

Family and consumer sciences educators have always been involved in the process of integrating different subjects into the curriculum (Hallman, 1988). A brief summary of some efforts to enhance the integration of basic skills into family and consumer sciences is outlined below. Basic skills is a generic term used to describe a number of different kinds of abilities, including reading, listening, oral communication skills, written communication skills, math skills, and science skills. Other terms encompass all basic skills including daily living skills (Hall and Sproles, 1988). Hallman, (1988) provides examples of how basic skills can be integrated into home economics content in secondary school curriculum. The Home Economics Coalition (1985) states that home economics contributes to social/economic survival and to the mastery of basic skills on a day to day basis. In a study involving 399 students, 29 teachers and a control group of 611, Ledwig, Robertson, Boschung, and Strickland (1987) found that students exposed to a home economics course that integrated basic skills in reading, language and math, made greater significant gains in knowledge of basic competencies than the students in the control group, enrolled in the same class.

The New Mexico Department of Education, Vocational-Technical and Adult Education Division, recommended an interdisciplinary approach in order to attract a more diverse enrollment in the schools. Teachers were encouraged to incorporate basics in all their home economics classes (Matern, 1989). Lester (1988) describes

ways in which writing can be used as a tool for teaching and improving learning in family and consumer sciences. In 1986, the Kentucky Department of Education required that teachers place emphasis on basic skills in their teaching. They were required to spend at least 60% of their teaching time in the teaching of basic skills. Family and consumer sciences educators were part of this process. The emphasis in this state was mathematics and science. As part of implementing this new emphasis, ten family and consumer sciences teachers were funded for in-service education on integration at Morehead University (Ellington & Henson, 1986). Hall and Sproles (1987) describe in detail the significance of basic skills and reading education in family and consumer sciences.

It is, clear therefore, that the family and consumer sciences discipline should continue to be integrative, not only among its content areas but with other disciplines. Family and consumer sciences provides relevant content for developing language skills. Hall and Sproles (1987) point out that the basic skills developed depend on the content being taught. Family and consumer sciences content offers a basis for developing a wide range of language skills and it is therefore appropriate to integrate language arts skill development and family and consumer sciences.

Language Arts Across the Curriculum

The relationship between language and content is not a recent one. The Greeks, insisting that the rhetorician be knowledgeable in many fields, saw the good public orator as one who could skillfully and persuasively marshal arguments on a wide range of subjects. During the middle ages, interest in the content and language was revived. The language subjects of grammar, rhetoric, and dialectic

(or logic) in the medieval curriculum were said to underlie such content-area disciplines as mathematics and natural science (Russell 1992). Today, another revival in content area writing is occurring. English/language arts specialists have observed that writing skills taught in isolation are not likely to be learned successfully (Tchudi & Tchudi, 1983). Students need to apply their language skills to real communication tasks including writing, reading, speaking, and listening in content areas. Fadiman and Howard (1979) wrote that "English class is not the only place in school where students may find that writing is worth their time and effort. Teachers of other subjects have what might be called the power of incentive."(p. 101)

In the United States of America, writing across the curriculum has been a major issue in secondary and higher education. Written papers and examinations came into wide use in the 1870s and eventually took focus away from recitation and oral examinations. This shift coincided with the rise of academic disciplines, each with its own text-based discourse, and conventions to carry on its professional work, to select, to evaluate, and to credential students. Disciplines have taken little direct interest in writing (Russell, 1992). Although the idea of language across the curriculum is not a new one, there is little indication that such integration occurs often in practice (Anderson, Hiebert & Scott, 1985). The language skills commonly applied across the curriculum include the receptive processes of listening and reading, and the expressive processes of speaking and writing. These skills are discussed in the next section.

Language Skills

The major language skills identified in literature were listening, speaking, reading, writing, and visual representation. Visual representation was not found to be discussed extensively in the literature as a separate language arts skill.

Listening: Listening is the language skill with which the learning process begins and is related closely to speaking since both deal with oral language (Tiedt, 1983). Listening is always dependent on someone else's speaking, their production of speech with all complexities of rate, pitch, meaning, usage of words, and body language. Listening is also related to reading in that they both depend on language produced by another person. Because listening is widely used in the classroom and societal situations, teachers need to help students become more effective listeners. Steven and Lichtenstein (1990) suggest an approach that would make listening more meaningful to students. Techniques such as the guided lecture are useful for helping students become better listeners. For this procedure, the students do not take notes while the instructor is speaking, but rather just listen. The teacher pauses at regular intervals, at which time students work together to summarize and write down the main points of what has been said. There are many approaches to teaching listening and the teachers should use those methods that are appropriate for instructional methodology. As society becomes increasingly media oriented, listening becomes more important as a language skill. It is essential to place greater focus on improving listening skills.

Speaking: The ability to communicate orally has become increasingly important in today's society as people interact face to face, on the telephone, or

through media such as radio and television. The speaking component of the language arts curriculum will include varied speaking experiences from conversation and discussion to drama and the more formal speeches or panel presentations (Tiedt, 1983). Formal opportunities for developing speaking skills come through student participation in student organizations such as Future Farmers of America and Future Homemakers of America. Both teachers and other leaders should provide students with as many opportunities for speaking as possible. Specific activities which can be used to practice both speaking and listening skills include:

a. involving students in discussions, rather than lectures;
b. asking students to summarize, or present opinions on information which a speaker has presented;
c. asking students to clarify answers and provide more specific information;
d. giving feedback about eye contact and body language;
e. using cooperative learning opportunities and peer collaboration (Stevens & Lichtenstein, 1990).

Reading: Reading is not a single skill that can be taught in isolation from other areas of the curriculum. Reading is a complex process that is interrelated with thinking and other language processes (Tiedt, 1983). The focus of content reading is on reading to learn, not learning to read. Content reading can be described as a means of improving communication (Readence, Bean, & Baldwin, 1981). The reader tries to communicate with the authors of written work by reconstructing their words and thoughts (Readence, Bean, & Baldwin, 1981; Vacca & Vacca, 1989).

Content reading utilizes all language processes as a means by which to approach learning from texts. The receptive language processes of listening and reading should be integrated with the expressive processes of writing and speaking to promote thinking and learning. The integrative aspects of the different language processes are shown in Figure 2.1 The processes of reading and listening are linked through thinking to the processes of writing and speaking. Content reading

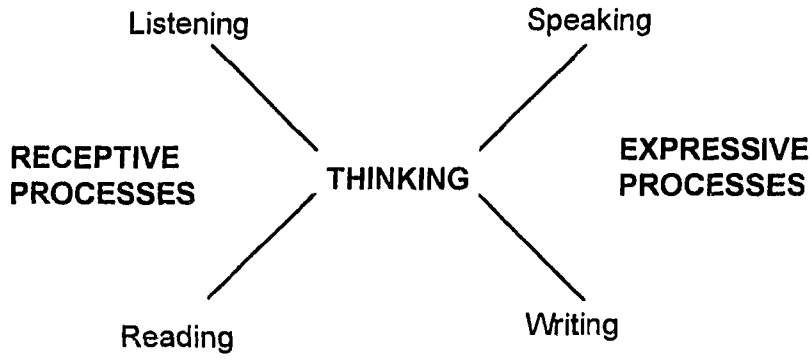

Figure 2.1. Integrative aspects of language processes (Readence, Bean, & Baldwin, 1981, p.10)

emphasizes those teaching practices which foster critical thinking. Such an integration promotes active learning situations, thus enhancing learning from the text.

Writing: Writing is a productive skill, a means of expressing oneself and communicating with others (Tiedt, 1983). People learn to write by writing. Learning activities that provide purposes for writing could be lists, questions, journals, stories,

letters, reports, and poetry. Writing is not an isolated activity. An integrated instructional approach focused on a theme enables students to listen and speak as they clarify their thinking leading them directly into reading and writing as they search for information and respond to the literature they encounter.

In developing a writing curriculum, it is important to understand the process of writing. The following assumptions drawn from research and teacher experience provide a basis for establishing goals for writing instruction (Tiedt, 1983):

a. students learn to write by writing;
b. students need to develop oral language fluency before they can be expected to write effectively;
c. students need to feel successful if they are to continue trying to write;
d. writing is the most difficult of the language arts skills;
e. writing is an individualized process;
f. writing cannot be taught in isolation;
g. students need to write for audiences other than teachers;
h. the writing process is a continuum that begins in the pre-school years and continues into adulthood.

Goals for a writing program must be realistic and must recognize student's varying abilities. Vocational education instructors play a vital role in preparing their students for the world of work. This role can be enhanced by using strategies which integrate language skills in their classrooms. As language across the curriculum becomes more important, examining the trends in language arts instruction is useful in the process of planning language skill development integration.

Trends in Language Instruction

Education in the United States has received a great deal of attention. The National Assessment of Educational Progress (NAEP) data through 1981 indicate that elementary school students were doing well in the reading basics but older students showed declining inferential comprehension skills (Miklos, 1982). Several NAEP reports published in the mid to late 1980s indicate that while schools were performing well in the fundamentals of language arts, they lacked success in teaching advanced reading and expressive skills. "The Reading Report Card" (1985) describes the trends in reading achievement over a fourteen year period for students at ages nine, thirteen, and seventeen, using data from national assessments over a decade. The report stated that although young readers seem to be achieving better in the eighties than in the seventies, students also seemed to have the most difficulty in higher levels of comprehension. The past decade has seen politicians, businessmen, and educators calling attention to the distressing state of students' communication skills (Funk and Funk, 1989). According to Richardson and Morgan (1990) current reports on literacy indicate that students:

a. are unable to express themselves effectively in either oral or written form;
b. are unable to make inferences from their reading;
c. are unable to think critically about what they read;
d. cannot process complex written material with facility;
e. do not recognize a large body of content knowledge which experts consider essential for informed readers;
f. do not prefer reading as a way to learn.

Content area teachers depend on written materials as the primary instructional source and they expect the students to read critically and infer easily

from the written materials. There is a mismatch between the expectations of the content area teachers and the literacy level of the students. It is important therefore that content area teachers play a major role in their students' development of language skills.

Innovation Theory

The innovation theory has been used in many studies to explain the process of innovation adoption (Rogers, 1983). The innovation theory provides a good basis for identifying variables that influence the adoption of innovations and explaining and patterns of interaction among these variables (Rogers, 1983; Spence, 1994). Innovation is defined as an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 1983). According to Barnett (1953), social scientists view the theory of innovation as processes and conditions under which people devise new additions to their culture. The process of innovation involves the following four major factors.

1. The change agent, the innovator, the person or group that decides upon and initiates the innovation.
2. The innovation or change itself
3. The user system: the person or group at which the innovation is directed or targeted
4. Time: the innovation is essentially a social process and so takes place over a period of time (Bishop, 1986).

The change agent or innovator will be involved with the process of innovation, the planning of innovation, and the strategies of innovation. The stages that an innovator or change agent goes through from developing an innovation to

getting it institutionalized in the user system comprise the innovation process. The innovation process consists of six phases, which are:

1. The problem: Before any innovation process begins, there must be some problem or situation causing dissatisfaction where it is hoped that some innovation will solve or ameliorate it.
2. Possible solutions: The second stage involves consideration of alternative solutions.
3. The innovation: From the possible solutions, the change agent will select the innovation that she/he considers will best achieve the desired results with the greatest effectiveness at a reasonable cost.
4. Development and introduction of the innovation: involves promotion, awareness and interest in the innovation.
5. Implementation: The innovation is implemented in the setting for which it was intended.
6. Institutionalization: the process of stabilizing an innovation so that it is absorbed and structurally integrated into the system.

The user system consists of the adopters, who are the users of an innovation. The adoption of an innovation is very closely tied in with the stages of innovation. Rogers and Shoemaker(1971) identified five stages through which an individual proceeds from first knowledge of an innovation to a decision to adopt. Phase four of the innovation process described above is critical in the adoption process.

The process of adoption

Adoption, in the context of innovation, is the outcome of a system of personal decision-making which leads eventually to the acceptance or rejection of something seen as new (Spence, 1994). To qualify as acceptance, the adoption behavior must be that of intended continued use. The process of adoption starts when one becomes aware of whatever appears to be new, and concludes when the innovation is put into full operation. At various points along the route to a decision, there will be a number of different factors at work. The classic model of adoption, which was originally published in the United States of America in the mid-1950s, identified five sequential stages of a process (Rogers, 1983; Rogers & Shoemaker, 1971; Spence, 1994):

1. Awareness
2. Interest
3. Evaluation
4. Trial
5. Adoption

Stage 1 - Awareness This is the stage when individuals become aware of an innovation for the first time. At the start individuals are exposed to an idea previously unknown to them in that form and, therefore, the person has very limited information about it. If individuals are not motivated to make any response, there may not be any move to the next stage.

Stage 2 - Interest Here, individuals are motivated, for some personally acceptable reasons to engage in purposeful search activity and try to find whatever

additional information there is about an innovation. Actions are directed to making an evaluative judgment of the innovation.

Stage 3 - Evaluation By the time the third level is reached, the individual is assumed to be trying hard to apply the new idea mentally to the present situation in order to judge the potential for benefit. In this stage, possible advantages and disadvantages are weighed against one another. If a generally favorable conclusion has been reached, the next logical step is to engage in an initial trial of the new idea.

Stage 4 - Trial At this stage, the innovation is tried out on a small scale. For example, a family and consumer sciences teacher may decide to teach one unit of new curriculum before deciding whether or not to teach the whole curriculum. Also, a school system may try out a new teaching method in a few schools before deciding to use it for the whole school system. If the trial stage is successful, the individual can then decide to adopt the new innovation.

Stage 5 - Adoption This could be a stage of acceptance or rejection. If individuals are satisfied with the results of the trial, the next step is to put the plan into operation to the extent that their personal circumstances allow them to do so, or reject the innovation for whatever reasons seem valid to them. This is a stage of re-evaluation. Even immediately after accepting the innovation, the individual may choose to discard the idea.

The stages of adoption have no clear boundary of separation and are often interrelated. However, each stage emphasizes different aspects of adoption. In

order for an innovation to be adopted, innovators need to give careful attention to the communication process in relation to the stages of adoption, so that the users can make informed decisions. The benefits of an innovation are very important in the decision-making process but the varying situations of the adopters may lead to the rejection of an innovation which may be otherwise successful. Innovations are adopted only to the extent that the circumstances of the individual allow. It is therefore important for all involved in innovation to understand the factors that affect its adoption. In planning strategies for innovations, change agents should consider the adoption process so that the innovations can be adopted.

Evidence shows that lack of careful planning results in waste of scarce resources, stress, disenchantment, and ultimately failure of the innovation (Havelock & Huberman, 1977). A strategy of innovation is defined as an attempt to engineer innovation. Havelock (as cited by Bishop, 1986) identified four predominant models of the change process.

1. The research, development, and diffusion model (R,D&D), where an innovation is conceived at a central planning unit and then fed into the system
2. The social interaction model, where change proceeds through contacts, formal and informal, among interested individuals or groups of people
3. The problem solving model, where the users themselves are involved in conceiving, initiating, and developing innovation at the local level
4. The linkage model, where intermediate agencies, e.g. teacher centers link together the center and the users involved in the innovation process.

Chin and Benne (as cited by Bishop, 1986) identified similar strategies but gave different names.

1. The rational-empirical model is similar to Havelock's R.D&D model but adds elements of the social interaction model. The rational-empirical strategy is based on the assumption that human beings are guided by reason, that they are rational and will respond to rational explanations and demonstrations. The change agent appeals to enlightened self-interest of the user. Such strategies involve the use of education to disseminate knowledge, research, and findings.
2. The normative re-educative model is similar to Havelock's problem solving model. Strategies in this model are based on the assumption that effective innovation requires a change of attitudes, skills, value systems, norms, and relationships within the system. The emphasis is on mutual co-operation and collaboration between the change agent and client.

In summary, the models of Havelock and Chin and Benne give rise to six general strategies in innovation:

1. Strategies based on systematic research-oriented and evaluation controlled approaches such as the R,D&D model and the rational-empirical model.
2. Strategies emphasizing communication and diffusion of the innovation through various channels such as the social interaction model and the rational-empirical model.
3. Strategies involving locally participative problem solving and self-help such as the normative re-educative model.
4. Strategies which emphasize user-agent co-operation and dialogue by planned linkage.

5. Power-coercive strategies based on power, authority, administration, and legalistic directives.
6. Open input strategies which emphasize openness to all ideas.

The user system is where the action is and is the target of all the change agent's planning. Because "center-periphery" or "top-down" strategies have tended to have little impact on innovation, attention has begun to focus on the user system's view of the innovation process and the accompanying problems. Potential users of an innovation are likely to accept an innovation if

1. It is relevant to them;
2. It is seen to have some relative advantage over other existing practices;
3. It is feasible in their particular organizational context;
4. It is compatible with the practices, values, and characteristics of the user system;
5. It is seen as posing no threat to the user group; to its identity, integrity, and territory;
6. Its benefits, material or non-material attach a sense of intrinsic satisfaction in the innovation;
7. It is flexible and adaptable (Rogers, 1983).

Various strategies have been used to bring about adoption of innovations. Understanding how the innovation theory has been applied in different disciplines provides an understanding of various factors influencing the process of adoption.

Application of the innovation theory

The innovation theory has been applied to various disciplines. Rogers (1983) summarized the history of research related to diffusion of innovations. In the area of anthropology, typical innovation studies relate to technological ideas with the main unit of analysis being tribes or peasant villages. Major types of findings included consequences of innovations and relative success of change agents. In early sociology, communities and individuals were studied in relation to innovations about city manager government, postage stamps, and radios. Findings from the studies resulted in S-shaped adopter distribution and characteristics of adopter categories. In rural sociology, the innovations studied related to agricultural ideas, and individual farmers were the main unit of analysis. Important results included the S-shaped adopter distribution curve, characteristics of adopter categories, perceived attributes of innovations and the rate of adoption, communication channels by stages in the innovation-decision process, and characteristics of opinion leaders.

In public health and medical sociology, the innovations studied included medical and health ideas, e.g. drugs, vaccination, and family planning. The unit of analysis included individuals and organizations like hospitals. Major results included opinion leadership in diffusion, characteristics of adopter categories, and communication channels by stages in the innovation process. In the area of communication, major innovations studied included news and technological innovations. Individuals or organizations were studied and major findings related to communication channels by stages in the innovation-decision process, characteristics of adopter categories and of opinion leaders, and diffusion networks.

In marketing, innovations studied related to new products. Individual consumers were the main unit of analysis and major findings related to characteristics of adopter categories and opinion leadership in diffusion. In geography, technological innovations were studied and individuals and organizations were the main units of analysis. Major findings related to the role of spatial distance in diffusion.

Application of the innovation theory to education

Rogers (1983) states that education has great potential for contribution to the innovation theory because organizations are involved in the adoption of educational innovations. Most teachers and school administrators are involved in the use of various innovations. In areas like agriculture, industry, and related sectors, the innovation is usually concrete, like machinery. Educational innovations are less concrete in comparison and the benefits are not readily tangible. Innovation in education mainly relates to teaching/learning innovations (Rogers, 1983; Rogers & Shoemaker 1971). The main units of analysis are the school system, teachers, administrators, and students. Major types of findings relate to the S-shaped adopter distribution curve, and characteristics of adopter categories. Teachers are usually the implementers of innovations in schools. They are an important part of the user system which is the target change efforts. Bishop (1986) points out that the readiness of the school culture is more essential than the product in the innovation process. Instructors perceive themselves as major actors in the change process and not merely as implementers of other people's innovations (Fahy, 1988). Educational change should be based on sound needs assessments of the user system; in many cases teachers are the users of educational innovations. Factors

influencing adoption of innovations should be well understood before efforts are made to introduce innovations. Some factors influencing innovation were identified in literature and are discussed in the next section.

Factors influencing adoption of innovation

There are various factors that affect the success of educational innovations. Some of the factors cited in literature as being important in the process of educational innovation are dissatisfaction with the status quo, knowledge and skills, availability of resources, availability of time, rewards and incentives, commitment of those involved in the process of innovation, leadership, compatibility of the innovation with the local situation, complexity of the innovation, attitudes; personal characteristics of the people involved, and barriers (Ely, 1990; Havelock, 1974; Huberman, 1973; Lewis, 1988; Rogers, 1983; and Waugh & Punch, 1987).

Spence (1994) classifies the factors that affect innovation into several clusters based on research he has carried out for two decades. He states that the following factors are related to progressiveness or innovativeness.

1. Predispositional factors
2. Personal factors
3. Situational factors
4. Behavioral factors
5. Intervening factors
6. Outcome factors.

Predispositional factors These are the internal forces and hereditary tendencies within individuals which predispose them to react or behave in a

particular way in a given situation. It must be noted, however, that individuals have free will and need not always respond to these tendencies. Factors included in this category are personality qualities like attitudes, beliefs, values and goals.

Personal factors Personal factors serve to identify individuals, both to themselves, and to others. These factors include age, sex, ethnic origin, and other factors which they cannot genuinely alter. Included also are those factors which are less clear cut such as years of schooling and level of education, and employment experience which cannot be altered retrospectively.

Situational factors These factors are external to concerned individuals but still exist within the environment of involved people. Examples include family size, income level, nature of community, and kind of employment. These factors are constraints on the extent to which individuality can develop before it is regarded as undesirable.

Behavioral factors Behavioral factors are concerned with the personal decision-making process. They are related to the actions which may be taken by the individual and arise from personal responses to perceptions of various phenomena.

Intervening factors Many of the intervening factors are outside the control of the individual but must be considered to determine their influence. Intervening variables can either stimulate or impede personal action by individuals. Such

factors include climatic conditions, geographic location, infrastructure, resource base, and policy.

Outcome factors Outcome factors are not, by definition, factors which precede or influence a decision. However, they are very important when examining any system of decision-making. This category of factors is produced by the interaction of the other five and may cause changes in future attitudes towards trials, levels of adoption, and final acceptance of an innovation.

The factors discussed above have a major impact on the adoption process and should be considered when introducing an innovation. Spence (1994) further suggests a model of how these factors interact to cause the outcome variables. Figure 2.2 is a schematic presentation of factor interaction.

The variables used in the present study are based on the categories suggested by Spence (1994). The Spence model is used as a basis for the path model that explains the relationships between the variables in the present study. In this study, the following variables relating to innovation were investigated:

1. Characteristics of the adopters (personal and situational variables)
2. Attitudes of the adopters (predispositional variables)
3. Barriers to integration (intervening variables)
4. General integration practices (behavioral variables)
5. Practices of integrating language arts skill development into family and consumer sciences content (outcome variables)

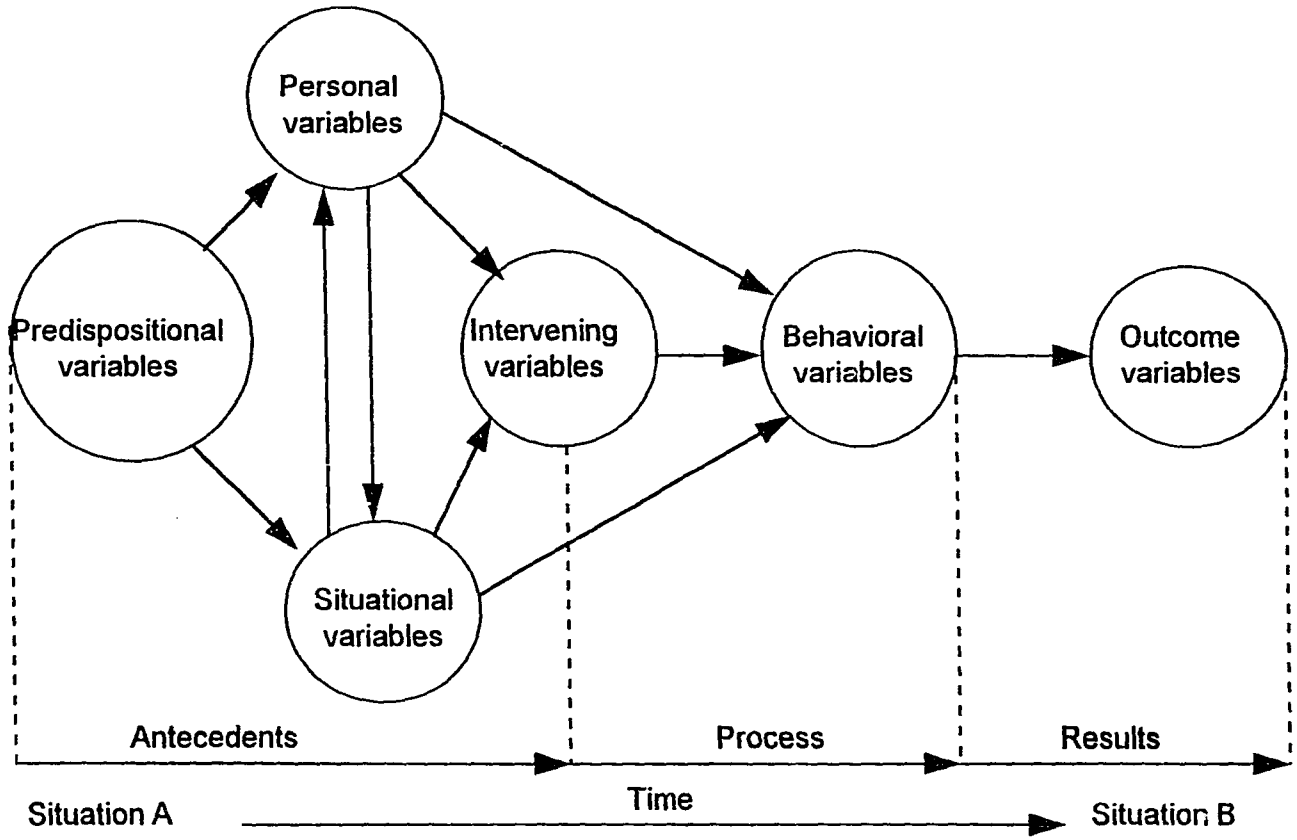

Figure 2.2. Factors influencing innovativeness (Spence, 1995, p. 47)

Characteristics of the adopters Literature shows that there is inconsistent evidence about the relationship of age and innovativeness (Bishop, 1986; Rogers, 1983; Rogers & Shoemaker, 1971). About a half of the 228 studies on this subject show no relationship; 19% show that earlier adopters are younger; 33 % indicate that they are older (Rogers, 1983).

Earlier adopters are said to have more years of education than later adopters (Bishop, 1986; Havelock, 1974; Huberman, 1973; Rogers, 1983; Rogers & Shoemaker, 1971). Years of service have been hypothesized to be related to receptiveness to change.

Attitudes An attitude is a mental and neural state of readiness organized through experience, exerting a directive or dynamic influence upon an individual's response to all objects and situations with which it is related (Allport, 1935). This definition suggests that an attitude has three components (see Figure 2.3):

1. A cognitive component, that is, the idea of the attitude object;
2. An affective component, that is, the emotion which charges the idea;
3. A behavioral component, that is, a predisposition to action (Triandis, 1971).

Huberman (1963) discussed time and difficulty involved in making various changes. He found that attitude was a major factor that required a longer time to acquire. Attitude towards an innovation might affect adoption of the innovation. In educational change, personal attitudes come into play and steps need to be taken to facilitate the necessary changes in attitude and behavior which must accompany the change. Brown and McIntyre (1982) conducted a study of science teachers (N=86) to determine factors influencing the introduction of new concepts into curricula. Results of the study showed that teachers with positive attitudes toward

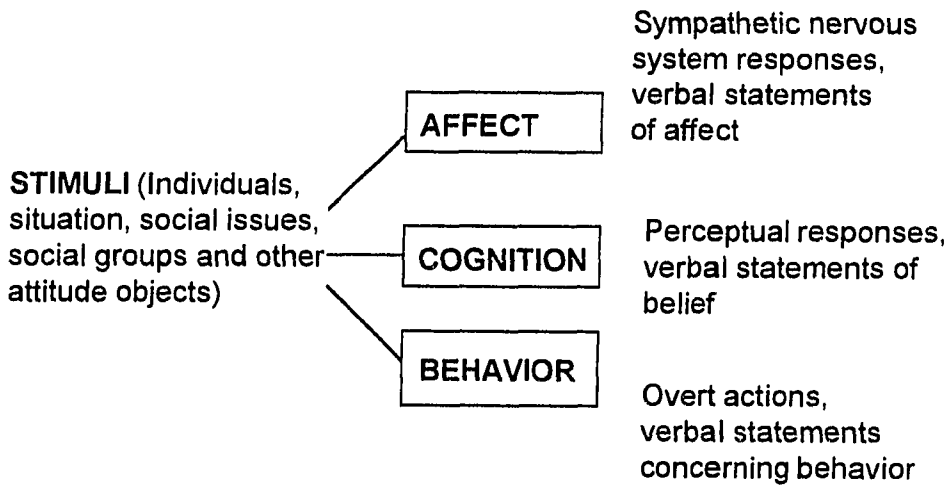

Figure 2.3. Schematic presentation of attitudes (Rosenberg & Hoveland, 1960)

new concepts indicated readiness for implementation of the innovation. Fahy (1988) found that attitudes of adult educators (N=37) were important in the way they regarded various educational innovations.

Barriers to innovation Adoption of an innovation is slowed down or limited by the presence of barriers. It is important to identify barriers so that their effects can be minimized. Havelock (1974) identified major barriers to innovation in a study of an individualized instructional program in Illinois. Four important barriers were identified:

- staff's lack of precise information about the innovation
- shortage of qualified personnel
- frustration experienced by teachers and other relevant staff to adopt
- adequacy of school facilities.

Time for planning was also pointed out as a major limitation for teachers (Ely, 1990). Other barriers that were pointed out by Havelock (1974) were as follows:

- lack of communication between the staff and the students
- lack of communication between the staff
- lack of resources and shortage of funds
- resistance to change by other teachers and staff
- lack of teamwork within the school.

In a case study from Milwaukee (Program Improvement Proposals), the most significant barriers were identified as shortage of funds, disorganization of the planning and implementation process, lack of communication between the teachers and students, and frustrations and difficulty experienced by teachers during the adoption process (Havelock, 1974). In a study that explores the practices and policies that define reform efforts aimed at integrating academic and vocational education, eight high schools that had attempted to implement integration reforms were studied through a case study approach (Bodilly, Ramsey, Stasz, & Eden, 1992). The major barriers to integration identified in this study were existing regulations (e.g. time regulations, graduation requirements, college entry requirements), inadequate funding (for materials, planning time, summer pay), and lack of support for teachers' efforts.

Summary

Integrating academic skills into vocational education is a concept that has been present since the nineteenth century (Vars, 1991), but one that has been developed more extensively over the past four decades. One reason for increased emphasis evolves from the concern that students fail to possess basic literacy skills. A foundation of basic skills (math, language, and critical thinking) enables individuals to participate successfully in the workforce, as well as in society. The future will demand that individuals possess basic skills to be productive in society (Sarkees-Wircenski & West, 1990). A great challenge lies ahead for educators to prepare students for the future. Family and consumer sciences, which is inherently integrative, has an important role to play in teaching basic skills to students (Hallman, 1988). Studies show that students taught with integrated approaches have higher achievement in basic skills than those who are not (Ledwig, Robertson, Boschung, & Strickland, 1987). Language skills are obviously important in the daily lives of individuals. Competency in language skills is essential for effective communication, basic literacy and better understanding of content from various subject areas. Language arts skills include receptive skills (reading and listening), expressive skills (speaking and writing), and visual skills. These skills are interrelated and should be learned in an integrated manner.

Vocational educators should be well educated in integration methodology so that they can effectively integrate academic skills into their various content areas. Subject integration can be done through various approaches which include infusion, collaboration, application, and institutional restructuring. The continuing challenge for vocational education is to design curriculum that takes into account solid subject matter and the needs of the learners and society. Implementing integration in

schools is a process that should be supported at the administrative level because integration thrives in a supportive atmosphere (Bodilly, Ramsey, Stasz, & Eden, 1992). Some major barriers to integration include the local educational philosophy, administrative support services, interaction level between vocational and general academic personnel, and financial resources (Sarkees-Wircenski & West, 1990). Measures should be taken to minimize the effects of these barriers.

Implementation of integration is not easy because of the many variables affecting the process. It is important to study how these factors interact so that the implementation process can be successful. Teachers are the final implementers of any change in curriculum and are affected by these factors. Innovation theory provides a framework for explaining the interaction among the various variables impacting the process of implementing integration. Factors that influence the adoption of an innovation can be placed into six categories: Predispositional, personal, situational, behavioral, intervening, and outcome factors (Spence, 1994). The theory of innovation is the process by and the conditions under which people devise new additions to their culture. Acceptance of an innovation is dependent on the communication process during the five stages of adoption (awareness, interest, evaluation, trial and adoption). It is therefore very important to understand the factors that affect the adoption of a specific innovation, in this case, the integration of language arts skill development into family and consumer sciences content, so that the most effective kind of communication is used.

CHAPTER 3: METHODOLOGY

The purposes of this study were to (1) provide baseline information about the practices and attitudes of family and consumer sciences secondary school teachers regarding the integration of language arts skill development into family and consumer sciences curriculum, (2) identify variables that influence family and consumer sciences secondary school teachers' practices of integrating language arts skill development into their teaching, and (3) describe relationships among these variables.

Research Design

The descriptive research approach was used in this study. Descriptive research studies are designed to obtain information concerning the current status of phenomena (Ary, Jacobs, & Razavieh, 1990). The specific type of design used was correlational. Correlational studies are concerned with determining the relationship(s) existing among variables. In correlational studies, measures are collected on at least two variables for the same group of subjects and then a correlation coefficient is calculated. Correlational research is not typically used to establish cause-and-effect relationships, but procedures related to causal modeling have made it possible to determine causality between variables (Asher, 1983). Path analysis was used in this study to test relationships among the variables. Path analysis is a statistical technique used to assess the direct and causal contribution of one variable to another in a non-experimental condition (Joreskorg & Sorbom, 1989). Path analysis is a powerful tool in explaining the effects that the variables have on each other. The correlational design was selected for this study because it

can provide insight into how the variables interact rather than simply describing the variables. Explaining how the variables relate provides more useful information for applications to practice and further research than do simple descriptive data alone.

Population and Sample

The sample consisted of 192 teachers randomly selected from a population of 520 secondary school family and consumer sciences teachers teaching 9th through twelfth grade in Iowa. This population was selected because family and consumer sciences is widely taught at secondary school level. Random sampling without replacement was used. A computer was used to facilitate the drawing of the random sample for the study.

Sample size was determined by using a statistical formula suggested in Fisher, Laing, and Stoeckel (1983, p. 31) and by taking into consideration the size of the population and the statistical analysis procedures to be used. The formula used is as follows:

$$n_f = \frac{n}{1+(n/N)}$$

where, n_f = desired sample size when population is less than 10,000

n = desired sample size when population is greater than 10,000

N = estimated size of population.

This formula is used when the desired accuracy is at or above the .05 level.

Based on the number of predictor variables expected in the study, the desired sample size was determined. Hinkle, Wiersma, and Jurs (1994) state that including more than six predictor variables may produce spurious results. In the hypothesized path model (see Figure 4.1), there were six exogenous variables and

four endogenous variables. For each path, it is recommended that there be between ten to fifteen subjects. The number of variables in this study produced a total of 30 paths. Based on 10 subjects per path, the desired sample size (*n*) was 300. The appropriate final sample size based on the formula was 190. This figure provided a guideline for the final sample size which was 192.

Instrument development

Instrument development procedures

The instrument used in this study was developed by the researcher in the Fall of 1993 in collaboration with a larger research team. The research team was working on a parenting curriculum project funded by the Iowa Department of Education and the Department of Family & Consumer Sciences Education & Studies at Iowa State University. The instrument was developed as part of the needs assessment for the parenting project. The instrument was divided into six sections (see Appendix A). Results from sections two, three, four and six are reported in this dissertation. Section one and five relate to the broader study and will be reported elsewhere. The items for the questionnaire were developed after an extensive review of literature on the following topics:

1. integration of academic and vocational subjects.
2. the nature of family and consumer sciences.
3. language arts across the curriculum.
4. innovation theory.

The instrument was reviewed at all stages of development by experts in various areas of specialization. In the first stage, a draft of the questionnaire was reviewed by experts consisting of eight professors in the areas of evaluation,

research design, curriculum, family and consumer sciences education, human development and language arts and graduate students in family and consumer sciences education. The reviewers were asked to examine the concepts included in the questionnaire, the language, the format and the layout of the questionnaire. Their comments were incorporated into the questionnaire and another draft was made. The instrument was then sent out for the pilot test and was simultaneously resubmitted to the same experts for review. In this case also, similar input was sought. The pilot test was conducted using a random sample of 30 teachers drawn from the target population who were then not included in the final sample. The subjects in the pilot test were asked to complete the questionnaire and give suggestions about any improvements that could be made. The questionnaire was revised again based on the feedback from the pilot test and the review by the experts. As a result of the feedback, the section on barriers to integration needed some modifications to make it more inclusive and to make the response categories clearer. Other minor changes were made and a final copy of the questionnaire was printed in booklet form (see Appendix A). It was estimated that the questionnaire would take 30 minutes to complete. The final questionnaire included five scales; parenting scale, language arts scale; general integration practices scale, barriers scale, and attitude scale. The parenting scale was related to the broader project whereas the other four were used in this study.

Instrument constructs

Experience with integration Experience with integration was measured by asking the subjects to indicate if they practiced integration, the number of years they had practiced integration, the number of years their school had practiced

integration, and the subjects they had integrated with family and consumer sciences content.

Integration practices related to language arts The main concept areas in the language arts scale were: the receptive processes of reading and listening; the expressive processes of speaking and writing; and visual processes. Teachers' language arts skill development practices were measured by using a likert-type scale. The 20 items in this scale were examples of skills related to language arts. The teachers were asked to indicate the amount of emphasis they placed on the development of these skills in their teaching of family and consumer sciences content. The response categories were (1) none, (2) little, (3) some, (4) much, and (5) a great deal.

General integration practices The items in the general integration practices scale were based on three models of integration identified in literature: the collaboration model; the application model; and the infusion model. A total of 12 items was constructed to exemplify integration of language arts skill development into family and consumer sciences according to the three models. The items in this scale related to the use of various integration methods. A likert-type scale was used. The teachers were asked to indicate how often they used the methods of integration stated or similar ones. The response categories were (1) never, (2) seldom, (3) occasionally, (4) often and (5) very often.

Barriers to integration The barriers identified were related to: resource base and support system limitations; time and structural limitations; and resistance

to change. Using a likert-type scale consisting of 11 items, the subjects were asked to indicate their likelihood of encountering barriers to integration. The response categories were (1) very likely (2), likely, (3) uncertain, (4) unlikely, (5) and very unlikely.

Attitudes toward integration Major concept areas for this section were: goals of integration; teacher preparedness for integrating language arts skill development into family and consumer sciences; appropriateness of family and consumer sciences content for integration with language arts; and the methodology of integration (models of integration). Using a likert-type scale, the teachers were asked to indicate the extent to which they agreed or disagreed with the attitude statements. The response categories were (1) strongly disagree, (2) disagree,(3) neutral,(4) agree, (5) strongly agree.

Background characteristics of subjects Background characteristics of subjects included information such as education, age, sex, teaching experience, licensure held, grades taught, and subjects taught.

Data Collection Procedure

Prior to data collection, the Human Subjects Review Committee at Iowa State University reviewed the proposed study and approved it (see Appendix C). A procedure that followed Dillman's four-step mailing procedure was used in order to obtain a good response rate (Dillman, 1978). The cover letter was constructed to explain the study, to convince the respondents that the study was useful and that their contribution was important. The departmental letterhead and the names of

funding agencies were used to show institutional affiliation. Each letter was personally addressed and hand signed by the researchers (see Appendix D). A code number was used to identify the questionnaire and the respondents were assured of confidentiality. The questionnaire was in an 8" X 11" booklet and was bar coded for paying return postage. The respondents were instructed to tape the booklet closed and mail it back postage paid.

The questionnaires were mailed to the respondents in May 1994. Two weeks after the initial mailing of the questionnaire, a reminder-cum-thank-you letter was mailed out to all the respondents. The second follow-up was a telephone call made to all the non-respondents four weeks after the mailing of the initial questionnaire. A second questionnaire was mailed out to the non-respondents after the telephone calls. The response rate at the time of the telephone follow-up was about 35%. The telephone calls and follow-up questionnaires increased the response rate to about 71%. To avoid losing data due to incomplete questionnaires, telephone calls were made to respondents to fill in the missing data as opposed to sending replacement questionnaires. This procedure added 12 cases.

Data Analysis

Data were coded and key-punched into the mainframe computer at Iowa State University and verified for accuracy after running initial frequencies. The Statistical Package for Social Sciences version 4.0 (SPSS Inc., 1990) and LISREL Version 7.0 (Joreskorg & Sorbom, 1989) were used to analyze the data. Data analysis consisted of three major procedures: descriptive statistics; correlational analysis; and path analysis. Descriptive statistics including means, modes, and standard deviations were computed. Cases with missing data were omitted from the

analysis. Negative statements in the attitude scale were recoded to portray the attitudes accurately . Reliability tests were run on the four instrument scales: integration language arts skill development practices, general integration practices, barriers, and attitudes scales.

Pearson's product-moment correlations were computed on all the variables in this study in order to determine the direction and strength of relationship between the variables. Pearson's product-moment correlation also helped to detect the presence of multicollinearity, a necessary step in selecting variables to enter the path model. LISREL version 7.0 was used for conducting the path analysis procedure which was used to test the predicted relationships among the variable in this study. Path analysis is often used to study patterns of causation among variables in an hypothesized causal system (Bohrnstedt & Knoke, 1982).

LISREL is a computer program that uses maximum likelihood analysis of structural equations to look at the causal model (Joreskorg & Sorbom, 1989). Maximum likelihood analysis relies on a procedure that estimates the parameters most likely to have generated the observed data. The term LISREL has come to stand not only for the software, but also as a statistical model and an approach to data analysis (Moline, 1988). The virtue of LISREL is its suitability to analyze complex phenomena. LISREL does not require the numerous restrictive assumptions necessary for path analysis and it therefore fits more realistically in social science and non-experimental research. Joreskog and Sorbom (1989) recommend three categories of causal models that can be used to explain causation among variables. The model used in this study is what Joreskog and Sorbom categorize as causal models for directly observed variables. There are two other categories of models they suggest: measurement models or factor analysis models,

which determine latent variables but not causation, and the full LISREL model which determines both causation and the effects of latent variables.

The seven steps suggested by Keith (1993) and Joreskog and Sorbom (1989) guided the procedure of path analysis. These authors recommend that in conducting LISREL analysis, the first step is to develop a model. This is the step when inference of cause and effect is made. The model is a representation of the researcher's theory. The second step is the decision of how to measure the variables. Although LISREL is a useful method for removing the effects of unreliability and invalidity, the measurement variables need to have reliable and valid measures to begin with. Data collection is the third step. Considerations of sample size vary; a ratio of 10-15 subjects per hypothesized path is suggested as a guideline. The fourth step involves studying the data. The researcher should look at descriptive statistics and correlations. A correlation or covariance matrix is inputted into LISREL for analysis. The fifth step is to analyze the model in LISREL. All but well-established models generally require modification and re-estimation several times. The sixth step is to examine the fit of the model. The criteria for assessing the fit of a model is the chi square (Pedhauser, 1982). A t-test is used to determine significance of paths. The significance level was set at 0.05. The test of model fit is discussed in more detail in Chapter 4. The seventh step is to examine, interpret and discuss the data.

In this study, a conceptual model was hypothesized based on the innovativeness model of Spence (1994) and the innovation theory of Rogers (1983). Data were gathered using the instrument discussed earlier in this chapter. Reliability of the scales in the instrument was computed and correlation analysis done to determine the variables to be entered into the model. Theory also guided

the procedure of selecting the variables. The correlation matrix of the variables selected for the model was entered into the LISREL program and analyzed.

The hypothesized full model (whereby all possible relationships are hypothesized) was analyzed for fit and significance. A null model (whereby no relationships are hypothesized) was also analyzed. The null model did not fit the data, and was not accepted. The full model fit the data but not all the paths were significant. Therefore, a reduced model that fit the data and had significant paths for all the variables was hypothesized. LISREL yielded path coefficients and residuals and also decomposed the effects into direct and indirect effects. Because the LISREL procedure is lengthy and complicated, it is more fully discussed in Chapter 4 together with the presentation of results. This provides more clarity as to what the different procedures were and also the results they yielded.

CHAPTER 4: FINDINGS AND DISCUSSION

The purposes of this study were to: (1) provide baseline information about the practices and attitudes of family and consumer sciences secondary school teachers regarding the integration of language arts skill development into family and consumer sciences curriculum, (2) identify variables that influence family and consumer sciences secondary school teachers' practices of integrating language arts skill development into their teaching, and (3) describe relationships among these variables. The findings and discussion of the results of the study are covered in this chapter. The results are presented in two sections: general descriptive information, and path analysis.

General Descriptive Information

The sample consisted of 192 teachers randomly selected from a population of 520 secondary school family and consumer sciences teachers in Iowa. Seventy-two percent (135 teachers) responded.

Background characteristics of teachers

The teachers had a mean age of 44.6 years and an age range of 22-66 years (see Table 4.1). Eighty-two teachers (60.7%) practiced integration of other subjects into family and consumer sciences (see Table 4.2). Regarding personal experience with integration, 62 (46.0%) had practiced integration for less than one year, 30 (22.2%) had practiced integration for 1 to 5 years, and 43 (31.9%) had practiced integration for over 5 years. The schools' experience with integration was also investigated. Ninety-one teachers (67.4%) indicated that their schools had

practiced integration for less than one year, 17 (12.6%) indicated that their schools had practiced integration for 1 to 5 years, while 27 (20.00%) indicated that their schools had practiced integration for over five years. In relation to integration of family and consumer sciences with specific subjects, 63 (46.7%) had integrated with language arts, 56 (48.1%) had integrated with science, 71 (52.6%) had integrated with mathematics, 47 (34.8%) had integrated with social studies, and 8 (5.9%) had integrated with other subjects (see Table 4.2). These findings indicate that the teachers did not have much experience with integration and that the schools more generally had even less experience in integration than the individual teachers.

Table 4.1. Age and teaching experience

Variable	Mean	SD
Age	44.6	9.2
Years of teaching	16.1	8.7

Table 4.2. Integration experience

Variable	Frequency	Percentage
Previous experience with integration	82	60.7
Integrating with language arts	63	46.7
Integrating with science	65	48.1
Integrating with math	71	52.6
Integrating with social studies	47	34.8
Integrating with other subjects	8	5.9
Experience with integration		
Less than 1 year	62	46.0
1 - 5 years	30	22.2
Over 5 years	43	31.9
Experience of school with integration		
Less than 1 year	91	67.4
1 - 5 years	17	12.6
Over 5 years	27	20.0

Educational background

All subjects surveyed had a bachelor's degree. Thirty-six (26.7%) had a masters degree, and one had a Ph.D. Twenty-seven (20.0%) had general family and consumer sciences licensure, 100 (74.1%) had vocational family and consumer sciences licensure, 11 (8.1%) had occupational family and consumer sciences licensure, and 65 (48.1%) had other endorsements (see Table 4.3).

Teaching experience and appointment status

Teaching experience ranged from one year to 44 years with a mean of 16.2 years, and a standard deviation of 8.7 and a mode of 15. Eighty-three percent (112) of the teachers had full-time appointments, while 17% (23), worked part-time. Regarding percentage of time spent in teaching family and consumer sciences, 66 (48.9%) of the teachers taught family and consumer sciences full time, while 69 (51.1%) taught family and consumer sciences part-time (see Table 4.3). The findings indicate that most of the teachers had a full time appointment, although less than half taught family and consumer sciences full time.

All the teachers surveyed taught at senior high school level. Twenty-one percent of the teachers also taught at middle school level and 43% taught at junior high school level. More than half of the teachers taught another subject or were involved in activities other than teaching family and consumer sciences. Table 4.4 provides information about the other subjects taught. The categories are not mutually exclusive and some teachers could be teaching more than one other subject. Forty-four (32.6%) of the teachers indicated that they taught health. Fifteen percent of the teachers indicated that they taught other subjects.

Table 4.3. Background characteristics

Variable	Frequency	Percentage
Educational level		
BS	135	100.0
Masters	36	26.7
Ph.D.	1	0.7
Licensure		
General home economics	27	20.0
Vocational home economics	100	74.1
Level Taught		
Middle school	29	21.5
Junior high school	58	43.0
Senior high school	135	100.0
Appointment status		
25% or less	1	0.7
25.1%-50%	8	5.9
50.1%-75%	9	6.7
75.1%-99.9%	5	3.7
100%	112	83.0
Time spent teaching home economics		
25% or less	4	3.0
25.1%-50%	13	9.6
50.1%-75%	25	18.5
75.1%-99.9%	27	20.0
100%	66	48.9

Table 4.4. Additional subjects taught along with family and consumer sciences

Subject	Frequency	Percentage
Science	2	1.5
Math	1	0.7
Music	0	0.0
Business	1	0.7
Social studies	1	0.7
English/language arts	3	2.2
Foreign language	1	0.7
Health	44	32.6
Physical education	1	0.7
Other	20	14.8

Language arts skill development practices

Teachers' integration practices related to language arts skill development were measured using a 20-item likert-type scale based on 5 concept areas: reading, listening, speaking, writing, and visual processes. The teachers were asked to indicate the amount of emphasis they placed on the development of the language skills described. The response categories were (1) none, (2) little, (3) some, (4) much, and (5) a great deal. Reliability analysis of the language arts scale yielded an alpha value of 0.92, indicating that this scale was a stable measure of teachers'

language arts skill development practices. Procedures used for establishing validity are discussed in the section on instrument development in Chapter 3.

Results indicated that the overall mean of the teachers' language arts skill development practices was 2.91 with a standard deviation of 0.62 (see Table 4.5). This finding generally indicated that teachers placed some emphasis on the development of language arts skill development in their teaching of family and consumer sciences. An examination of the mean scores related to individual items indicated that there were no mean scores above 3.56 for any item. Only six items had mean scores between 3.0 and 3.56. Of these six items, two were related to reading (items 3 and 4) two to visual processes (items 2 and 1), one to speaking (item 5), and one to listening (item 6). The remaining items had means between 2.37 and 2.99.

In summary, results indicated that teachers did not place much emphasis on the development of language skills in their teaching of family and consumer sciences. Although practices related to oral language (speaking and listening) were slightly more emphasized than other areas, the emphasis was generally low. Writing skills were the least emphasized. The mean scores of items related to writing were all below 3.0 (items 1, 4, 14, 17, 20). Similar results in relation to writing were obtained in a study by Johnson, Holcombe, Simms, and Blezek (1992). In this study, agriculture teachers (n=129) and family and consumer sciences teachers (n=125) were compared on their use of writing in their classrooms. Results indicated that the agriculture teachers scored higher, although both groups had generally low scores. The researchers recommended that the family and consumer sciences and agriculture teachers needed education related to the use of writing in classroom instruction.

Table 4.5. Means and standard deviations of the items measuring language arts skill development practices

Item	Mean	SD
1. Using mass media as sources of information.	3.56	.98
2. Using visual representation for a variety of purposes.	3.50	.90
3. Recognizing relevant details when reading.	3.33	.85
4. Distinguishing between fact and opinion.	3.33	.94
5. Using oral language effectively in a variety of situations.	3.30	.95
6. Maintaining eye contact with speaker.	3.27	.99
7. Constructing meaning from written text.	2.99	1.01
8. Preparing for oral presentations.	2.94	.77
9. Asking for clarification and/or additional information from speaker.	2.87	.93
10. Evaluating visual presentations.	2.85	.93
11. Sharing written products with others.	2.81	.89
12. Using all parts of speech effectively in sentences.	2.79	1.09
13. Proofreading written work for errors.	2.76	1.18
14. Identifying stated or implied main ideas of written work.	2.74	1.07

Table 4.5. (Continued)

Item	Mean	SD
15. Using non-verbal language to express oneself in an oral presentation.	2.71	.95
16. Recognizing the development of an overall theme in written work.	2.66	.97
17. Writing essays for a variety of purposes and audiences.	2.54	.86
18. Expanding vocabulary by determining word meanings from specialized dictionaries.	2.51	1.10
19. Conveying meaning through dramatic play.	2.40	.96
20. Evaluating own writing.	2.37	.94

Overall mean = 2.91, SD = 0.62

1 = None, 2 = Little, 3 = Some, 4 = Much, 5 = A great deal

General integration practices

Teachers' general integration practices were measured using a 12-item likert-type scale. The items were based on the models of integration identified in the review of literature; infusion, collaboration, and application. The respondents were asked to indicate how often they used the methods of integration described. The response categories were (1) never, (2) sometimes, (3) occasionally, (4) often, and (5) very often. Reliability analysis of the items in the general integration practices scale yielded an alpha value of 0.74, indicating that this scale was a stable measure of the teachers' general integration practices.

Results indicated that the overall mean value of the teachers' general integration practices was 2.02 with a standard deviation of 0.51 (see Table 4.6). This finding indicated that the teachers seldom practiced integration. The lowest means scores were those concerning the collaboration approach to integration with means ranging from 1.29 to 1.81 (items 12, 10, 9, and 7). These findings indicate that teachers were involved in collaboration to a limited extent. The items concerning the infusion approach generally had higher means ranging from 2.29 to 2.97 (items 8, 4, 3, and 2). These findings indicated that teachers occasionally used the infusion approach to integration. The means of the items concerning the application model were slightly higher than those of the collaboration model but generally lower than those of the infusion model, although the item with the higher score was from this group (item 1 with a mean of 3.30). The other two items had means ranging from 1.40 to 1.85 (items 8, 7, and 6). The findings concerning general integration practices in this study concur with those from a study by Roegge (1992) who surveyed 639 schools on the use of various integration strategies and found that 354 (55%) of the schools had incorporated one or more integration

Table 4.6. Means and standard deviations of the items measuring general integration practices

Item	Mean	SD
1. Having students plan and carry out activities with children at a local daycare center.	3.30	1.35
2. Building vocabulary through an extensive glossary that accompanies a parenting unit.	2.97	1.25
3. Reinforcing students' writing skills through journaling.	2.70	1.17
4. Using literature to teach a lesson on family violence and abuse.	2.29	1.19
5. Using folklore from other cultures to understand diverse family structures.	1.88	.90
6. Having students develop a long-term project such as a newsletter on parenting.	1.85	.94
7. Going to a language arts teacher to discuss ways in which students' language skills should be improved.	1.81	.90
8. Having students develop a packet of materials that can be used by adolescent parents to locate and utilize community resources.	1.64	.95
9. Working with a language arts teacher in order to set up cross-curricula activities.	1.55	.84
10. Teaming with a language arts teacher in planning for the students application of language competencies.	1.53	.83

Table 4.6 (Continued)

Item	Mean	SD
11. Having students publish essays on parenting topics in the school newsletter or local newspaper.	1.40	.67
12. Giving joint assignments with the language arts teacher which would fulfill course standards in both areas.	1.29	.69

Overall mean = 2.02, SD = 0.51

1 = Never, 2 = Seldom, 3 = Occasionally, 4 = Often, 5 = Very often

strategies. Of these approaches, teaming, content alignment and occupational clusters were the least-used approaches. Although collaboration is less applied, Schmidt (1995) found that this approach was the most important in determining success of integration.

Barriers to integration

The barriers to integration were measured using 11 items. The barriers included in the scale related to resource base and support system limitations, time and structural limitations, and resistance to change. The respondents were asked to indicate the likelihood that they would encounter the barriers listed. Response categories were (1) very likely, (2) likely, (3) uncertain, (4) unlikely, (5) very unlikely. Reliability analysis yielded an alpha value of 0.81, indicating that the items were a

stable measure of barriers to integration. Various procedures used to establish validity are described in the instrument development section of Chapter 3.

Results indicated that the overall mean of the teachers' likelihood to encounter barriers is 2.93 on a five-point scale with a standard deviation of 0.67 (see Table 4.7). This finding indicated that teachers were generally uncertain about their likelihood to encounter barriers. Examination of individual items provides an insight into how they perceived specific barriers. Lack of planning time emerged as the biggest limitation (mean of 1.21 on item 1) with the teachers indicating that they were very likely to experience lack of planning time in their efforts to practice integration. Scheduling that did not facilitate integration emerged as the second most likely barrier the teachers were likely to encounter (mean of 1.96 on item 2). School structure that did not facilitate integration was the third most likely barrier for the teachers to encounter with a mean of 2.43 (item 3). Other barriers that the teachers indicated that they were likely to be encountered were lack of resources with a mean of 2.75 (item 4), limited knowledge of integration with a mean of 2.81 (item 5), and student resistance to change with a mean of 2.91 (item 6).

The teachers were uncertain if they lacked adequate preparation to teach language skills (mean = 3.16, item 7). They felt that they were unlikely to encounter lack of co-operation from the language teachers. The mean for this item was the highest in the barriers scale (mean = 3.84, item 11). The items concerning school policies regarding flexibility in methodology had a mean of 3.77 (item 10), and that concerning school policy regarding flexibility in course content had a mean of 3.73 (item 9). These findings indicated that school policies were not viewed as barriers that were likely to be encounter in the efforts to practice integration.

Table 4.7. Means and standard deviations of the items measuring barriers to integration

Item	Mean	SD
1. Lack of planning time.	1.29	.66
2. Scheduling that does not facilitate integration.	1.96	1.17
3. School structure that does not facilitate integration	2.43	1.31
4. Lack of resources to use for integrating.	2.75	1.21
5. Limited knowledge of integration methodology.	2.81	1.09
6. Student resistance to emphasis on language arts skills in home economics.	2.91	1.17
7. Lack of preparation to teach language arts skills.	3.16	1.21
8. Parent resistance to change.	3.60	1.14
9. School policies that do not allow for flexibility in course content.	3.73	1.23
10. School policies that do not allow for flexibility in teaching methodology.	3.77	1.16
11. Lack of cooperation from the language arts teacher.	3.84	1.18

Overall mean = 2.93, SD = 0.67

1 = very likely, 2 = likely, 3 = uncertain, 4 = unlikely, 5 = very unlikely

It can be concluded that the schools had a supportive environment for integration, although planning time was not adequate and scheduling did not facilitate integration. In trying to reduce barriers to integration, efforts should be made to make more time available for teachers to plan, to adjust scheduling to accommodate integration, and to improve school structure to foster integration. Schools should continue to provide resources and support for teachers in their efforts to practice integration. Lewis (1988) found that a positive support system was a major factor in determining whether teachers continued to use a new nutrition curriculum.

The findings related to barriers to integration in this study concur with findings from a study by Bodilly, Ramsey, Stasz, and Eden (1992) who studied eight innovative schools that were implementing integration reforms. The major barriers identified in their study were related to existing policies and regulations, inadequate funding and resources, lack of planning time, and lack of support for the teachers' efforts. The present study indicates that school policies are not restrictive. Therefore, schools should maintain non-restrictive policies regarding content and methodology.

Attitudes toward integration

Attitudes toward integration were measured using a 16-item likert-type scale. Major concept areas were: benefits of integrating language skill development into family and consumer sciences curriculum, teacher preparedness to integrate language skill development into family and consumer sciences content, and the methodology of integration (models of integration). The teachers were asked to indicate the extent to which they agreed or disagreed with the attitude statements. The response categories were (1) strongly disagree, (2) disagree, (3) neutral, (4)

agree, (5) strongly agree. Reliability analysis of the attitude scale yielded an alpha value of 0.88, indicating that the items in this scale were a stable measure of teachers' attitudes toward integration.

Findings indicated that teachers' attitudes toward integration were slightly positive, with an overall mean of 3.61 and a standard deviation of 0.41 (see Table 4.8). Mean values of all the items in the attitude scale were above 3.0 and ranged from 3.39 to 4.21. There were nine items with means above 4.0: compatibility of family and consumer sciences and language arts (items 1, 3, 4, 6 and 7), benefits of integration (items 2, 5, and 9), and one item concerning collaboration (item 8). Another item concerning collaboration had a mean of below 4.0 (item 8). Other items that had means below 4.0 but above 3.0 were related to attitudes toward teacher preparation to integrate language skills into family and consumer sciences content (items 12, 15, and 16), the infusion model (items 13, and 14), and the application model (item 13). The means for these items ranged from 3.39 to 3.94.

In summary, teachers agreed that integrating language skill development into family and consumer sciences content would be beneficial to the students and that family and consumer sciences was compatible with language arts. The teachers studied also had positive attitudes toward collaboration with language arts teachers. They had slightly positive attitudes about their preparedness to integrate language arts skill development into family and consumer sciences, and to use infusion and application models of integration.

Implications of the findings from the descriptive results are that teachers felt willing and able to integrate language arts skill development into family and consumer sciences content. However, findings also indicated that their integration practices were very low. The discrepancy between attitudes and practice could be

Table 4.8. Means and standard deviations of the items measuring attitudes toward integration

Item	Mean	SD
1. A project that requires students to use knowledge from several subject areas is an appropriate way of enhancing learning of home economics content.	4.33	.68
2. Incorporating skills from other areas into the teaching of home economics will confuse the students.	4.21	.80
3. Language arts concepts can be integrated into home economics courses.	4.21	.74
4. Home economics provides appropriate content for the development of language skills.	4.09	.63
5. Integration of home economics and language arts cannot adequately prepare students for the world of work.	4.08	.85
6. Students learn better if content from different subjects is not mixed.	4.05	.71
7. Home economics and language arts should be considered as separate subjects and should not be integrated.	4.03	.84
8. I would be willing to work with a language arts teacher to set up cross-curricula assignments for our students.	4.03	.68
9. Integrating home economics and language arts will improve the students' achievement in both home economics and language arts.	4.02	.82

Table 4.8 (Continued)

Item	Mean	SD
10. Language arts skills should be taught exclusively by language arts teachers.	3.94	.91
11. I would not feel comfortable going to a language arts teacher to discuss ways in which my students language skills could be improved.	3.87	.98
12. Home economics teachers have the knowledge and skills to integrate language arts into home economics courses.	3.70	.97
13. The use of literature in teaching home economics will remove focus from the home economics content.	3.59	.90
14. Poetry can be used to enhance learning in home economics.	3.52	.93
15. I would be comfortable to evaluate my students' language arts skills.	3.50	.98
16. Home economics teachers are not adequately prepared to teach language arts skills to their students.	3.39	1.04

Overall mean = 3.91, SD = 0.41

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

explained by the various barriers that hinder teachers' practices. Schmidt (1995) states that teacher collaboration is very important in the process of integration and that schools should encourage and facilitate this process. Findings from the present study indicated that teacher collaboration is practiced to a very limited extent, yet the teachers felt very positively about it and indicated that they did not perceive that they would experience lack of co-operation from the language arts teachers.

Teacher collaboration can be perhaps termed as an area for growth through focused professional development activities. Since teacher collaboration is very important in the integration process, efforts should be focused on helping teachers use this approach more. It is important to note that the limitations related to planning time, scheduling and school structure are the most serious barriers and they affect the efforts of collaboration. Therefore, the efforts of fostering more collaboration need to be effected at a higher level than the classroom. The whole school structure, including scheduling and teaching loads needs to be adjusted to foster collaboration. To further understand how the various factors affecting teacher practices regarding integration interact, the relationships among the variables discussed in this section are described in the following section. Path analysis was the statistical approach used to study the relationships.

Path Analysis

Path analysis is often used to study patterns of causation among variables in an hypothesized causal system (Bohrnstedt & Knoke, 1982). Path analysis uses correlational data to examine the plausibility of hypotheses about causal relationships among variables (Moline, 1988). In a path model, three main kinds of

variables can be identified. Exogenous variables are those that are not influenced by other measures in the model; endogenous variables are those that are affected by other variables in the model; and residuals or errors, which represent those factors not actually measured that impinge upon endogenous variables (Asher, 1983). Latent or intermediate variables are those that are not directly observable and operate within the other two kinds of variables mentioned above (Keith, 1993; Kendall & O'Muircheater, 1977).

Path analysis is basically concerned with estimating the magnitude and direction of linkages between variables and using these estimates to provide information about the underlying causal processes. Path analysis, using standardized regression coefficients to describe a theoretical model, sometimes requires a series of regression equations. At each stage, a dependent variable is regressed on the independent variables that are logically and/or temporarily before the dependent variable. Each multiple regression equation provides a set of standardized regression coefficients which are the net effect of an independent variable on a dependent variable after considering all other independent variables. The coefficients among endogenous variables are called betas and those between exogenous and endogenous variables are called gammas.

Path analysis allows the decomposition of total effects into direct and indirect effects. Indirect effects represent the influences of each causal variable on a dependent variable that is mediated through intervening variables. Path analysis also provides an R^2 for the model, an indication of the theoretical model's total explanatory power. The R^2 indicates the percentage of variance in the dependent variable which is explained by all the independent variables (Moline, 1988). In the diagrammatic presentation of path models, one-way arrows leading from each

independent variable to the dependent variable are used to indicate paths of causation and curved rather than straight two-arrow lines are used to indicate correlation coefficients among exogenous variables (Duncan, 1966). Path coefficients are presented along the straight line between the variables. Residuals, which represent the portion of variance in an endogenous variables that is not explained by the model, are shown by an arrow pointing towards the respective endogenous variable.

Selection of variables for the path model

The procedure for selecting variables to be entered in the path model involves correlation analysis, sample size consideration, and the importance of the variables in literature. Correlations are major criteria for selecting variables to enter in a path model, but are not the sole criterion. Hinkle, Wiersma and Jurs (1994) and Joreskog and Sorbom (1989) state that it is not feasible to obtain a measure on a large number of predictor variables that are highly correlated with the independent variable and not correlated among themselves, because including more than five to six independent variables rarely produces a substantial difference in the result. Also, theory guides the determination of the variables to be included in a model. The sample size is of extreme importance. For each hypothesized relationship in the model to be tested, there should be 10-15 subjects (Hinkle, Wiersma & Jurs, 1994; Keith, 1993). When selecting variables to be entered in a path model, exogenous variables should have very low or no correlation. This is because they are independent variables, and should independently explain variance in the dependent variables. The exogenous variables should, however, be highly

correlated with the endogenous variables. Correlations among the endogenous variables should be strong.

Correlation analysis

To determine the direction and strength of relationship among the independent and dependent variables to be entered in the path model, Pearson's product-moment correlations were computed. Pearson's product-moment correlations also help to detect the presence of multicollinearity, a necessary step in selecting variables to enter into the path model. Independent variables should have very low correlation with one another. Table B.1 shows results of the correlation analysis.

Based on the criteria described earlier in this section, nine variables were selected to enter the path model. The Spence (1994) model was used to determine the placement of the variables in the model. The exogenous variables in the path model were previous experience with integration, years of integration, integration of language arts with FCS, education, time spent teaching family and consumer sciences, and endorsement. The endogenous variables in the path model were barriers, attitudes, general integration practices, and language arts skill development practices. Problems of multicollinearity were not expected to arise because the correlations were generally low among the exogenous variables and high among the endogenous variable, and between the exogenous and endogenous variables. The exogenous variables that had high correlations were hypothesized in literature as very important in the process of innovation adoption. These variables were previous experience with integration and integrating language arts with FCS, previous experience with integration and years of practicing

practicing integration, years of practicing integration and integrating language arts with FCS. Some of these variables were however rejected in the final reduced model (see Figure 4.2). All the exogenous variables in the final reduced model had low correlations and therefore did not have multicollinearity problems. The correlations among the nine variables selected for the hypothesized full model are described below.

a. Significant correlations were found among the following exogenous variables at the .01 level.

- Previous experience with integration and integrating language arts with FCS (r = .75)
- Previous experience with integration and years of practicing integration, (r = .87)
- Years of practicing integration and integrating language arts with FCS (r = -.74)

In spite of these high correlations, these variables were included in the full model anyway, because previous experience and length of experience with an innovation are hypothesized in literature to be important variables in the process of adoption.

b. Significant correlations were found among the following endogenous variables at the .01 level.

- Language arts practices and attitudes (r = .29)
- General integration practices and attitudes (r = .32)
- Barriers and attitudes (r = .46)

c. Significant correlations were found among the following exogenous and endogenous variables at the .01 level.

- General integration practices and integrating language arts with FCS (r = .26).

d. Significant correlations were found among the following exogenous and endogenous variables at the .05 level.

- General integration practices and previous experience with integration (r = .20)
- General integration practices and integrating language arts with FCS,(r =.22)
- Language arts practices and years of practicing integration (r = .19)

A model representing the relationships among the variables was hypothesized (see Figure 4.1). Based on this model, three hierarchically related models were analyzed in this study. These models were the full recursive model, the null model, and the reduced model.

The full recursive model

In this study, a causal relationship was hypothesized among the following variables: background characteristics of the subjects, barriers to integration, attitudes, general integration practices, and language arts skill development practices. The hypothesized relationships were based on the model proposed by Spence (1994) (see Figure 2.2 in Chapter 2) and the theory of innovation (Rogers, 1983). The background characteristics of subjects considered in this model include previous experience with integration, years of previous experience with integration, education (BS Vs MS/ Ph.D.), integrating with language arts, time spent teaching family and consumer sciences and state teaching endorsement. Figure 4.1 is a presentation of the hypothesized full recursive model.

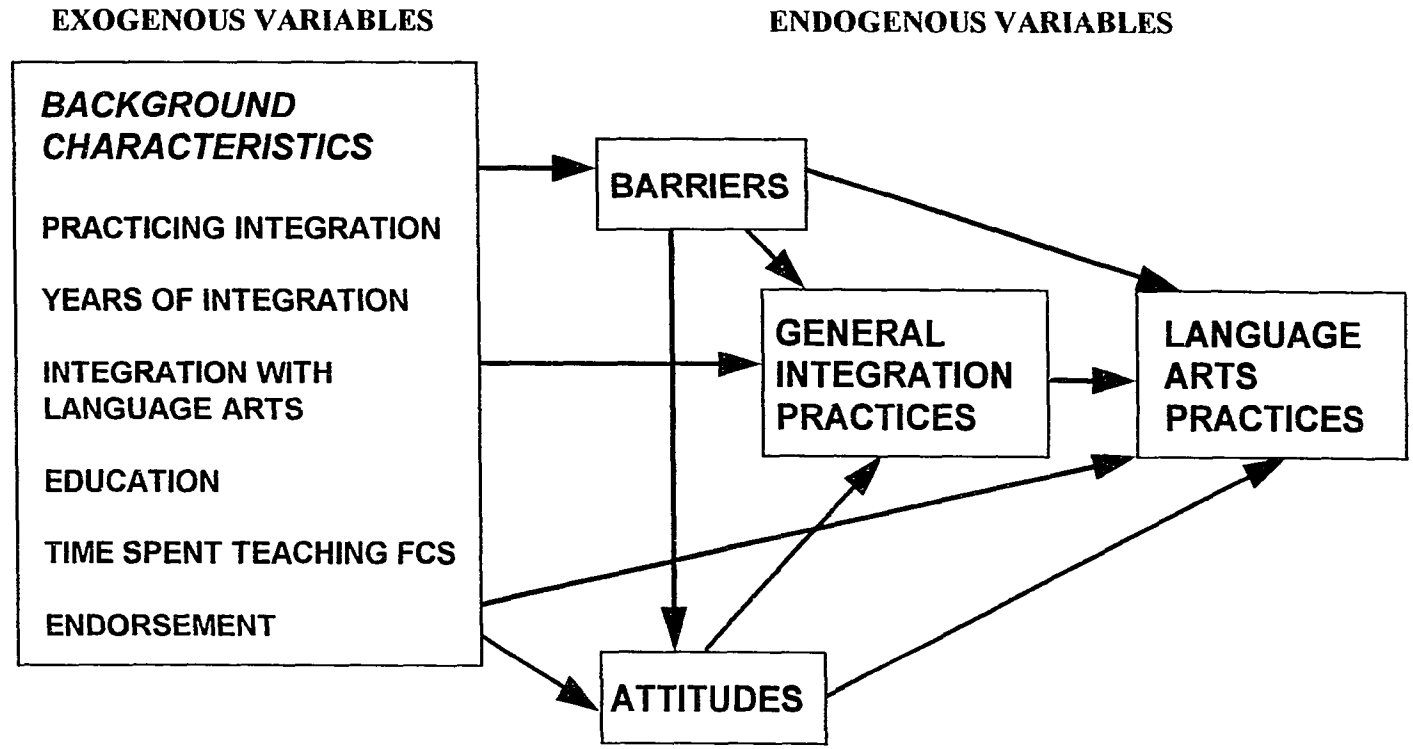

Figure 4.1. Path diagram for the hypothesized full model

The matrix of the selected variables was entered into SPSS Version 4.0 and analyzed by LISREL Version 7.0. The structural equations to be solved in this model are as follows:

Barriers = f (previous experience with integration, years of practicing integration, integrating language arts with FCS, education, percent of teaching in FCS, endorsement).

Attitude = f (previous experience with integration, years of practicing integration, integrating language arts with FCS, education, percent of teaching in FCS, endorsement, barriers).

General integration practices = f (previous experience with integration, years of practicing integration, integrating language arts with FCS, education, percent of teaching in FCS, endorsement, barriers, attitude).

Language arts practices = f (previous experience with integration, years of practicing integration, integrating language arts with FCS, education, percent of teaching in FCS, endorsement, barriers, attitude, general integration practices).

Parameter estimates were obtained using LISREL version 7.0. The structural equations were solved using the maximum likelihood approach. The statistics that were used to evaluate the structural equations were the R-square and the standardized regression coefficients, or path coefficients. R-square indicates the

proportion of variance in the dependent variable that is explained by the independent variable in the equation. The path coefficient indicates the amount of expected increase or decrease in the dependent variable for one unit change in the independent variable, controlling for other independent variables in the equation.

The t-test associated with the coefficients was used to assess the statistical significance of the relationships with significance level of $p<0.05$ being used to determine the rejection of the null hypothesis . Chi square test was done to assess if the model fit the data. In assessing whether the model fits the data, the chi square has to be significant at a level above 0.05 (Pedhauser, 1982). The greater the probability, the better the fit of the model for the data. In the full model, all the paths were freed. A chi square value of 0.00 with 0.00 degrees of freedom was obtained ($p=1.00$). Although the p-value indicates that the model fits that data perfectly, not all the paths were significant. In order for a model to be retained, all the paths have to be significant. Table 4.9 shows the completely standardized regression coefficients of the full model.

The null model

In the null model, all the paths are fixed. The hypothesis stipulates that there were no relationships among the variables in the model. In this study, a chi square value of 144.92 with 30 degrees of freedom was obtained ($p=0.00$). Since the p-value of less than 0.05 indicates that a model does not fit the data, this model was determined not to fit the data and was therefore rejected.

Table 4.9 Completely standardized regression coefficients for the full model.

Independent variable	Dependent variable			
	Barriers	Attitudes	General integration practices	Language arts practices
Previous experience with integration	0.058	0.285	0.005	0.093
Years of integration	-0.086	0.089	0.146	0.162
Integrating with language arts	-0.255	-0.235*	0.098	-0.001
Education (BS Vs MS/Ph.D.)	-0.047	0.155*	0.024	-0.078
Time spent teaching FCS	-0.158	-0.048	-0.111	-0.001
Endorsement	-0.032	-0.136	0.106	0.088
Barriers	-	0.427*	0.172	-0.121
Attitudes	-	-	0.216*	0.189*
General integration practices	-	-	-	0.533*
R-Square	0.057	0.287	0.201	0.369
df	6/128	7/127	8/126	9/125

* Significant at 0.05 level.

Total coefficient of determination for structural equations is 0.241.

The reduced model

In the reduced model, all paths that were not significant were fixed at zero. A chi-square value of 31.02 with 24 degrees of freedom was obtained (p=.153). The reduced model is shown in Figure 4.2. Among the background characteristics, only education and previous experience with integration were found to be significant predictors of language arts skill development practices. Among the endogenous variables, barriers predict attitude and general integration practices, attitude predicts general integration practices, and general integration practices predict language arts skill development practices

The three hierarchically related models were evaluated for fit using chi-square values and their respective degrees of freedom. Table 4.10 shows the chi-square estimates, p-values, and degrees of freedom associated with the three models. The reduction in chi-square from the null model to the reduced model was 113.9, with a change in degrees of freedom of 6. The critical chi-square associated with 6 degrees of freedom at the .05 level was 12.59. Joreskog and Sorbom (1989) state that a large drop in chi-square compared to the degrees of freedom indicates that the changes made in the model represent a real improvement. Since the change in chi-square exceeded this critical value, it was concluded that the change from the null model to the reduced model was statistically significant. The reduced model was a better model than the null model because it fit that data and because the chi-square was significant. The computed chi-square change from the reduced model to the full model was 31.02. The change in degrees of freedom was 24. The critical chi-square at 24 degrees of freedom was 36.42. Since the change in chi square did not exceed the critical value, it was concluded that although the full

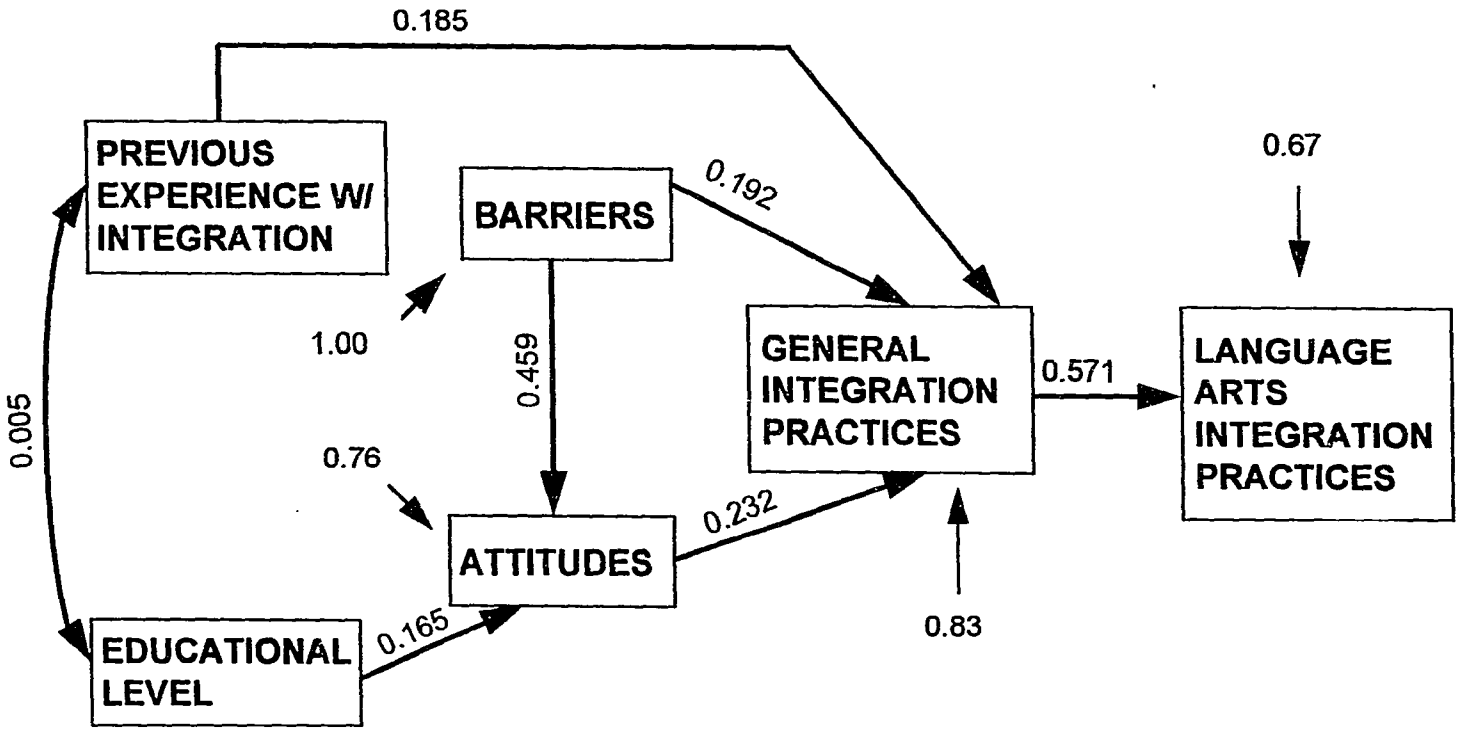

Figure 4.2. Reduced model with path coefficients and residuals

Table 4.10. Chi-square change

Model	Chi-square	Change in Chi-square	df	Change in df	p-value
Null	144.92		30		0.000
		113.9*		6	
Reduced	31.02		24		0.153
		31.02		24	
Full	0.00		0		1.000

* Significant at $p \leq 0.05$.

model fit the data (p=1.00), it was not necessarily better than the reduced model. The reduced model was retained.

Direct and indirect effects among the variables were estimated (see Table 4.11). The total effect is the change induced in a consequent variable by a given shift in an antecedent variable, irrespective of the mechanism by which the change occurs. Indirect effects are those parts of a variable's total effect which are transmitted through specified intervening variables in the model. Direct effects are those parts of a variable's total effect which remain after all the intervening variables have been omitted. Decomposition of effects into direct, indirect, and total effects is important because it helps identify important suppressor or synergistic variables which mediate between two variables (Alwin & Hauser, 1975). Table 4.11 shows direct, indirect, and total effects for the reduced model.

Table 4.11. Direct, indirect, and total effects for the reduced model.

Independent variable	Dependent variable	Direct effect	Indirect effect	Total effect
Experience w/ integration	Barriers	-	-	-
Education		-	-	-
Experience w/ integration	Attitude	-	-	-
Education		0.165*	-	0.165*
Barriers		0.459*	-	0.459*
Experience w/ integration	General integration practices	0.185*	-	0.185*
Education		-	0.038	0.038
Barriers		0.192*	0.107*	0.298*
Attitude		0.232*	-	0.232*
Experience w/ integration	Language arts practices	-	0.106*	0.106*
Education		-	0.022	0.022
Barriers		-	0.170*	0.170*
Attitude		-	0.133	0.133
General integration practices		0.571*		0.571*

* Significant at $p \leq 0.05$.

Results of hypothesis testing

Level of education: Among the exogenous variables in this study, level of education emerged as a significant predictor of attitudes toward integration. Rogers (1983) and Spence (1994) found that more education led to more positive attitudes and hence earlier adoption of innovations. Huberman (1963) stated that personal attitudes facilitate necessary changes in behavior which must accompany change. Based on the findings in this study, it can be concluded, therefore, that more education would lead to earlier adoption of integration of language arts skill development into family and consumer sciences curriculum.

Previous experience with integration: In this study, previous experience emerged as a significant predictor of general integration practices. This finding suggests that people with prior experience with integration had higher general integration practices and hence better practices of integrating language arts skill development into family and consumer sciences curriculum. This finding confirms the hypothesis by Rogers (1983) that innovations are likely to be accepted if they are compatible with the practices, values and characteristics of the user system. Based on the findings in this study, it can be concluded that teachers with previous experience with integration are more likely to adopt the concept of integrating language arts skill development into family and consumer sciences curriculum than those without experience.

Barriers to integration: Barriers to integration emerged as a significant endogenous variable. Barriers directly affected attitudes and general integration

practices. The lower the likelihood that a teacher perceived of he/she would encounter barriers, the better the attitudes and the higher the general integration practices. There were no exogenous variables that significantly caused barriers in the model. Therefore, it can be assumed that barriers intervened in the causal system. This finding confirms findings by Spence (1994), who states that intervening variables are outside the control of the individual or other adoption unit but must be considered to determine their influence. It can be concluded that presence of barriers slows down the process of adoption of the integration of language arts skill development into family and consumer sciences curriculum.

Attitudes: Attitudes towards integration were found to have a significant positive direct effect on general integration practices and an indirect effect of language arts skill development integration practices. Attitudes have been hypothesized as being important factors in the process of adoption. Spence (1994) states that attitudes are predispositional factors that predispose individuals to act in a certain way. Huberman (1963) states that positive attitudes facilitate acceptance of change. Rogers (1983) found in many of his studies that attitudes were a major factor in the adoption process. The findings of this study confirm the hypothesis that positive attitudes lead to adoption of an innovation. It can therefore be concluded that the more positive the attitudes are, the higher the general integration practices and hence the higher the language arts skill development practices.

General integration practices: General integration practices were found to have a significant positive effect on language arts skill development practices. All the other factors in the model indirectly affected language arts skill development

practices through general integration practices. General integration practices can thus be considered as important predictors of language arts skill development practices. Rogers (1983) states that an innovation is likely to be accepted if it is compatible with practices, values, and characteristics of the user system. Since language skill development integration practices are an application of integration methodology, there is high compatibility between the two. The finding in this study confirm the Rogers (1983) hypothesis that an innovation is likely to be accepted if it is compatible with practices, values, and characteristics of the user system. It can be concluded that general integration practices lead to adoption of the integration of language arts skill development into family and consumer sciences curriculum.

Language arts skill development practices: Language arts skill development practices comprise the outcome variables. Outcome variables are described by Spence (1994) as those factors produced by the other variables in a causal system. Integration of language arts skill development is the innovation in this study. It was hypothesized that language arts skill development practices could be predicted by the variables included in the model. Significant causal paths were identified and language arts skill development was successfully predicted by the variables in the reduced model. Descriptive data showed that teachers had positive attitudes toward the benefits of integrating language arts skills development into family and consumer sciences. They also had positive attitudes toward the compatibility of family and consumer sciences and language arts. These findings agree with Rogers (1983) hypotheses that potential users were likely to accept an innovation if it was viewed as beneficial; and if it was compatible with the practices, values, and characteristics of the user system. It can therefore be concluded,

based on the reduced path model, that if the following conditions are fulfilled, integration of language arts skill development into family and consumer sciences would be adopted: the teachers have a higher level of education (in this case MS, Ph.D.); the teachers have previous experience with integration; the teachers have positive attitudes; the teachers have high general integration practices; and the level of barriers is reduced.

Summary of the path analysis

A path model was hypothesized based on a model by Spence (1994) and the innovation theory of Rogers (1983). Nine variables were included in the full model. The exogenous variables were previous experience with integration, years of integration, integration of language arts with FCS, education, time spent teaching family and consumer sciences, and endorsement. The endogenous variables were barriers, attitudes, general integration practices, and language arts skill development practices. Three hierarchically related models, the full recursive model, the null model and the reduced model, were assessed for fit using chi-square. Significance of relationships among the variables in the models were tested using a t-test. The full model fit the data but not all relationships among the variables were significant. This model was therefore rejected. The null model did not fit the data and was rejected. The reduced model fit the data and had significant relationships among all the variables included in it and was therefore accepted.

The results from the reduced model indicate that previous experience with integration leads to better general integration practices. More education leads to more positive attitudes toward integration of language arts skill development into family and consumer sciences. As the perceived likelihood of experiencing barriers

increases, the attitudes toward integration of language arts skill development into family and consumer sciences become less positive. Also, the perceived likelihood of experiencing barriers leads to lower general integration practices. The teachers with higher general integration practices have higher language arts skill development practices. Therefore, knowledge about general integration leads to more integration of language arts skill development into family and consumer sciences. The implication of this finding is that there is a need for general knowledge about integration methodology in order to practice teaching of the language arts. Education has been hypothesized as having an impact on attitudes (Rogers, 1983). This study indicates that more education leads to more positive attitudes.

Results from the decomposition of effects shows that more education leads to more positive attitudes, which in turn lead to more practice of integration and in this case, to more integration of language arts skill development into family and consumer sciences. Barriers lead to less integration practices which in turn reduce integration of language arts skill development into family and consumer sciences. Barriers also lead to less positive attitudes which in turn lead to fewer integration practices and consequently less integration of language arts skill development skill development into family and consumer sciences. The indirect effects of barriers could further be decomposed for both paths but LISREL Version 7.0 does not provide specific breakdown of the coefficient. The program only provides the total indirect effect of a certain variable on another.

The results of the reduced model generally indicate that language arts skill development integration practices are highly dependent on knowledge about integration in general. All the variables in the model affect language arts skill

development integration practices through general integration practices. In order to help the teachers adopt the concept of integrating language arts skill development into family and consumer sciences, they have to be provided with education about general integration methodology. Efforts to assist teachers to adopt the concept of integrating language arts skill development into family and consumer sciences curriculum should aim at improving their attitudes toward curriculum integration and minimizing barriers, such as time constraints and scheduling. Also, teachers should be encouraged to practice some form of integration in order to gain more knowledge in integration methodology and apply more integration of language arts skill development into family and consumer sciences curriculum.

Chapter Summary

Data analysis consisted of descriptive statistics, correlational statistics and path analysis. The sample in this study consisted of 192 teachers with 135 (72%) responding. Sixty-one percent of the teachers indicated that they practiced subject integration. Teachers generally practiced integration longer than the schools. Of the responding teachers, 26.7% had a masters degree and one had a Ph.D. degree. Most of the teachers were on full-time appointment although about a half taught family and consumer sciences part-time.

Findings indicate that the teachers had positive attitudes toward subject integration but practiced integration to a limited extent. Integration of language arts skill development was especially limited. The teachers perceived lack of planning time and scheduling as the barriers to integration they were most likely to encounter in their efforts to practice subject integration. Correlation analysis was done to

show the strength and direction of relationships among the variables in the study. Relationships among the variables were further investigated using path analysis.

Of the three hierarchically related models tested in the path analysis, the reduced model was accepted while the null and the full models were rejected. Level of education and previous experience with integration emerged as the background characteristics that had significant influence on the endogenous variables. The endogenous variables were barriers, attitudes, general integration practices, and language arts skill development practices. Previous integration experience had direct influence on general integration practices and indirect influence on language arts skill development. Level of education had direct influence on attitudes and indirect influence on language arts skill development practices. Barriers affected both attitudes and general integration practice directly and language arts skill development practices indirectly. General integration practices was the only variable that influenced language arts skill practices development directly. All the other variables in the model influenced language arts skill development practices indirectly. This finding indicates that general integration practices is an important intervening variable in determining language arts skill development practices of teachers.

The innovation theory formed the conceptual framework for this study. Findings from the hypothesis testing confirm several hypotheses in the innovation theory. Rogers (1983) states that education has good potential for contributing to the understanding of the innovation process because there are many innovations being adopted in education. He also states that little has been done in education in relation to the process of innovation adoption. This study makes a contribution to the understanding of the process of innovation adoption in education. It provides a

model that can be further tested and modified for application to integration of other subjects other than family and consumer sciences and language arts. A summary of the whole study is given in Chapter 5.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The objectives of this study were to: (1) provide baseline information about the practices and attitudes of family and consumer sciences secondary school teachers regarding the integration of language arts skill development into family and consumer sciences curriculum, (2) identify variables that influence family and consumer sciences secondary school teachers' practices of integrating language arts skill development into their teaching, and (3) describe relationships among these variables. Integration in this study is defined as the process of combining content from different school subjects to make a students' learning experience a more inclusive whole.

The data used in this study were collected in May, 1994, in Iowa. The sample consisted of 195 randomly selected secondary school teachers out of a population of 520, with 135 (72.0%) responding. Secondary school teachers were selected because they are the final implementers of the process of curriculum change and also because it is at this level that family and consumer sciences is widely taught in schools. Data were analyzed using Version 4.0 of the Social Sciences Statistical Package (SPSS). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed. Path analysis was used to estimate the importance of paths of influence of independent variables on the dependent variable. Path analysis involves the construction of a model consisting of a number of exogenous and endogenous variables that represent a

causal system among the variables. Path coefficients are yielded to show the direction and strength of a relationship.

Results indicated that the language arts skill development practices of the teachers were low with a mean of 2.91 on a scale of 1 to 5 where 1 = no emphasis and 5 = a great deal of emphasis. Development of writing skills was the least emphasized language skill in the teaching of family and consumer sciences content. The teachers practiced subject integration at a low level (mean was 2.02 on a scale of 1 to 5 where 1 = never and 5 = very often). The collaboration approach to integration was the least used although literature indicates that it is very important to the process of integration. A study by NCRVE supports the fact that collaboration between teachers is very important for successful integration (Schmidt, 1995).

The overall mean of the likelihood of the teachers of experiencing barriers was 2.93 (on a scale of 1-5 where1 = very likely to 5 = very unlikely). Results indicated that there was a positive support system. This means that the school was supportive of subject integration. This is an important factor in determining the success of an innovation. Lewis (1988) found that a positive support system was a major factor in determining whether teachers continued to use a new nutrition curriculum. Lack of planning time emerged as the biggest limitation for teachers. The mean for this factor was 1.29, indicating that the teachers were highly likely to face lack of planning time. The teachers varied little on this factor (SD = 0.66). Second to the variables lack of planning time was scheduling that did not facilitate integration (mean = 1.96. This was followed by school structure that did not facilitate integration (mean = 2.43). This study indicates that school policies were not perceived by teachers as barriers they were likely to encounter in their efforts to

practice subject integration. Parental and student resistance was not perceived as a major barrier.

Teachers' attitudes towards integration were positive (mean = 3.91 on a scale of 1 to 5 where 1 = strongly disagree and 5 = strongly agree). Teachers had positive attitudes towards the benefits of integrating language arts skill development into family and consumer sciences curriculum; therefore, these benefits should continue to be emphasized. The teachers agreed that family and consumer sciences and language arts were compatible. They also had positive attitudes towards teacher collaboration. The attitudes towards teacher preparation to integrate language arts skill development were slightly positive. This was the same case for attitudes towards the infusion and application approaches to integration. Correlation analysis was done to describe relationships among the variables.

Statistically significant correlations were found among attitudes, practices of integration of language arts skill development into FCS content, general integration practices, and perception of barriers. These factors are important for understanding how a change in the curriculum would be received by the teachers. The results from path analysis indicate that, according to this study, only two exogenous variables have significant effects on the endogenous variables. Education (BS Vs MS/ Ph.D.) was found to be positively related with attitudes. This means that the more education an individual had, the better were their attitudes toward integration. Rogers (1983) states that education is a major variable impacting attitude. Previous experience with integration had a positive relationship with general integration practices, meaning that if an individual practiced integration, their integration practices would be better. There was no variable in the model that significantly explained barriers. However, barriers have a negative relationship with attitudes

and general integration practices. Although the coefficients in the model are positive, the interpretation has to go back to coding of the data. The subjects were asked to indicate how likely they were to experience barriers, on a scale of 1 to 5, with 1 being equal to very likely and 5 being equal to very unlikely. The attitude scale had a response range of 1 = strongly disagree, and 5 = strongly agree. A positive correlation coefficient therefore indicates that as the likelihood of experiencing barriers decreases, the attitudes become more positive.

Attitudes were found to have a positive relationship with general integration practices, Therefore, more positive attitudes led to more integration practices. General integration practices had a positive and very strong relationship with language arts skill development practices. No other variable in the model directly affected language arts skill development practices, clearly indicating that general integration practices were a very important intervening variable.

The Carl D. Perkins Act requires that vocational teachers integrate academic skills into vocational education courses in federally funded programs. The teachers are the final implementers of these changes. Many change efforts have had limited success because of failure to assess the needs of the implementers and the factors that will affect the adoption of change. This study has found that teachers have positive attitudes towards integration, but are faced with major barriers related to lack of planning time, scheduling, and school structure that does not facilitate integration.

This study contributes to new information in the areas of subject integration and the innovation adoption process. In the area of subject integration, information about the practices of teachers and factors influencing these practices is provided. Findings from this study confirm some findings from other studies done on subject

integration. Variables were identified and relationships among them hypothesized and tested based on the innovation theory. The findings from this study confirmed several hypotheses of the innovation theory. This study contributed to the innovation theory by showing how this theory can be applied to subject integration in the areas of family ad consumer sciences and language arts. Also a model was hypothesized and tested in this study. This model can be further tested and modified for application so subject integration in other areas.

Conclusions

Based on the findings of this study, the following conclusions can be made:

1. Family and consumer sciences teachers apply the various integration practices to a limited extent in classroom instruction. The integration approach that was least applied was collaboration with other teachers. The infusion approach was the most used. The limited practice of subject integration may be explained by two factors: lack of planning time, and scheduling that did not facilitate integration.

2. General integration practices was the only variable in the path model that had direct influence on language arts skill development practices of the teachers. Teachers therefore need to have a good background in general integration methodology before they can effectively apply integration to specific subject areas.

3. Family and consumer sciences teachers placed little emphasis on the development of various language skills in their teaching. Writing was the least emphasized skill. Oral skills, however, were more emphasized.

4. In order to achieve successful integration of language arts skill development into family and consumer sciences curriculum, efforts must be made to facilitate collaboration between teachers from both areas. Collaboration has been cited as an important factor in the process of curriculum integration (Schmidt, 1995). Collaboration may be difficult to achieve because it involves more time and changes in scheduling and it needs to be implemented at a higher level than the classroom.

5. Lack of planning time is the most serious barrier to curriculum integration. Other important barriers include scheduling problems and school structure that does not facilitate integration.

6. Family and consumer sciences teachers have positive attitudes toward integration of language arts skill development into family and consumer sciences content. The teachers felt positively about benefits of integration, compatibility of family and consumer sciences and language arts and about collaboration.

7. Teachers need general knowledge about integration methodology in order to effectively implement curriculum integration.

8. Curriculum integration is best approached as a school improvement effort because it touches on all aspects of school including curriculum, pedagogy, materials, and organization.

9. Curriculum integration, like any other process of change, takes a long time to implement.

10. Curriculum integration flourishes in a supportive atmosphere where there is support for staff development and collaboration and also where there are adequate resources.

11. More education leads to positive attitudes and to higher adoption of curriculum integration strategies in teaching. To come to this conclusion, teachers with only a bachelors degree were compared with those with graduate education.

General Recommendations

Based on the findings of this study, the following recommendations are made:

1. Schools should be encouraged to make changes at the administrative level to provide more planning time for teachers, adjust scheduling, and change the general school structure in order to facilitate the process of integration. Schools should continue to provide resources and support for teachers in their efforts to practice integration.
2. Teachers should be provided with opportunities to increase their knowledge about curriculum integration methodology in general. This should be part of

the in-service education program. Institutions of higher leaning should develop short courses for in-service teachers to educate them about curriculum integration.

3. The collaboration approach to integration was the least used although literature indicates that it is very important to the process of integration. A study by NCRVE supports the fact that collaboration between teachers is very important for successful integration (Schmidt, 1995). Since the relationship between general integration practices and language practices is positive, increasing collaboration between the teachers will increase language arts skill development practices. Family and consumer sciences teachers should therefore work closely with language arts teachers in their efforts of integrating language arts skill development into family and consumer sciences curriculum

4. Non-restrictive school policies regarding content selection and teaching methodology should be maintained so that teachers can engage in innovative activities like integration.

5. Teachers' input into curriculum decisions should be increased.

6. Curriculum integration should be introduced to pre-service family and consumer sciences teachers through courses that prepare them to use integrative approaches in their teaching.

7. Teacher educators in family and consumer sciences should apply integrative approaches in their teaching so as to provide a model for pre-service teachers and also to provide a more holistic understanding of family and consumer sciences content.

8. The benefits of curriculum integration should not be limited to academic and vocational education. Since family and consumer sciences is an integrative field, integrative approaches should be applied in teaching of family and consumer sciences curriculum at all levels so that the integrative nature of the field is not lost.

Recommendations for Further Research

1. A quantitative approach was used in this study. This approach provided general information about the variables and the interactions among the variables. For more insight, a qualitative approach should be used. Qualitative research will provide greater understanding of how the teachers feel about integration and why their practices are at the present level. A better understanding of how the barriers affect the teachers practices and attitudes and how they can be minimized would be useful information that can be provided though a qualitative approach.

2. This study contributes to the understanding of the innovation theory as it applies to subject integration between family and consumer sciences and language arts. It provides a model that can be further tested and modified for application to other subjects. One recommendation for further testing of this

model is to use a larger sample size so that more relationships among variables can be tested. The sample size of 135 in this study could not permit the testing of many other relationships among variables. Another recommendation for further testing of this model is to apply it to the integration of family and consumer sciences with other academic subjects such as mathematics, science and social sciences. A third recommendation is that the model should be tested at national level.

3. One conclusion from this study was that subject integration is best achieved as a school improvement effort. This implies that information is needed about the role of administrators in the subject integration process. School administrators should be studied to provide information about their attitudes, perceptions and practices regarding subject integration. Such a study would identify how administrators could enhance the process of subject integration.

4. The target group for subject integration is the students. In order to fully understand how subject integration can be implemented for maximum benefit to the students, information is needed about their attitudes and perceptions of subject integration. Also, research can be done to find out how subject integration benefits the students. To achieve this, students taught using integrative approaches could be compared on knowledge gains with those using other approaches that are not integrative.

5. Teacher educators play an important role of preparing teachers for teaching at both the pre-service and in-service levels. Research that describes what

teacher educators are doing regarding subject integration would provide information that would help predict future practices of teachers. Also, such research would assess if the teacher educators possess the necessary knowledge required to teach subject integration to the teachers. Such information would be useful in the process of planning the strategies of educating teachers about subject integration.

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APPENDIX A: DATA COLLECTION INSTRUMENT

PARENTING-LANGUAGE ARTS INTEGRATED CURRICULUM NEEDS SURVEY

PART I:

INSTRUCTIONS: Please circle the appropriate response.

1. Do you teach parenting?
   1. Yes
   2. No (skip to #4).

2. If the answer to #1 above is yes, how do you offer the course?
   1. As semester course (identify name of course) _____
   2. As a unit (specify the number of weeks and title of unit) _____
   3. As a lesson. (In what unit?) _____

3. At what grade level do you teach parenting in senior high school?
   Please circle all that apply then skip to #5.
   1. 9th
   2. 10th
   3. 11th
   4. 12th

4. If you do not teach parenting, do you plan to teach it in the future?
   1. Yes
   2. No

How much emphasis would you give to the following topics in a senior high school parenting curriculum offered as a semester course?

Use the following categories in determining your response.
1 = None
2 = Little
3 = Some
4 = Much
5 = A great deal

	None	Little	Some	Much	A great deal
5. Biological factors of human reproduction	1	2	3	4	5
6. Emotional development of children	1	2	3	4	5
7. Nutrition for young children	1	2	3	4	5
8. Music and dance for children	1	2	3	4	5
9. Helping children form values	1	2	3	4	5
10. Safety and protection of children	1	2	3	4	5

	None	Little	Some	Much	A great deal
11. Approaches to discipline	1	2	3	4	5
12. Teaching children to appreciate diversity	1	2	3	4	5
13. Character building	1	2	3	4	5
14. Perceptual development of children	1	2	3	4	5
15. Children's play	1	2	3	4	5
16. Physical development of children	1	2	3	4	5
17. Children's art	1	2	3	4	5
18. Individual differences in children	1	2	3	4	5
19. Influences of heredity and environment on development	1	2	3	4	5
20. Children with special needs	1	2	3	4	5
21. Prenatal and postnatal care for mothers	1	2	3	4	5
22. Children's literature	1	2	3	4	5
23. Sibling rivalry	1	2	3	4	5
24. Children and the world of work	1	2	3	4	5
25. Family structure and functions	1	2	3	4	5
26. Parental roles and responsibilities	1	2	3	4	5
27. Motivating the child	1	2	3	4	5
28. Human sexuality and responsible sexual behavior	1	2	3	4	5
29. Family planning	1	2	3	4	5

	None	Little	Some	Much	A great deal
30. Building self-esteem/ self concept	1	2	3	4	5
31. Community resources that aid in parenting	1	2	3	4	5
32. Child care arrangements	1	2	3	4	5
33. Skills required for effective work with children	1	2	3	4	5
34. Providing for physical needs of children (e.g. shelter, clothing, and medical care)	1	2	3	4	5
35. Parents' well being	1	2	3	4	5
36. Teenage pregnancy	1	2	3	4	5
37. Emotional aspects of parenting	1	2	3	4	5
38. Decision to parent	1	2	3	4	5
39. Dealing with family changes	1	2	3	4	5
40. Problems of family violence, abuse and neglect	1	2	3	4	5
41. Parenting over the life span	1	2	3	4	5
42. Parenting styles	1	2	3	4	5
43. Financial considerations related to parenting	1	2	3	4	5
44. Sequential aspects of growth and development	1	2	3	4	5
45. Communication within the family	1	2	3	4	5
46. Legal and moral issues of parenting	1	2	3	4	5
47. Television and children	1	2	3	4	5
48. Effects of conditions in the environment on prenatal development (e.g. substance abuse)	1	2	3	4	5

	None	Little	Some	Much	A great deal
49. Cognitive development of children	1	2	3	4	5
50. Working and parenting	1	2	3	4	5
51. Moral development of children	1	2	3	4	5

52 Other topics (Please list)

PART II:

Integration is the process of combining content from different school subjects to make a student's learning experience a more inclusive whole.

53. Have you integrated academic subjects in your teaching of home economics?
    1. Yes
    2. No (skip to #57)

54. How long have you practiced integration of subjects?
    1. Less than one year
    2. 1-5 years
    3. More than 5 years

55. How long has your school been practicing integration of subjects?
    1 Less than one year
    2. 1-5 years
    3. More than 5 years
    4. Does not apply

56. What academic subjects do you integrate into your home economics courses?
    Please circle all that apply.
    1. Language arts
    2. Science
    3. Mathematics
    4. Social Studies
    5. Other (Specify) _____

In your home economics classes, how much emphasis do you place on the development of the following skills?

Use the following categories in determining your response.
1. None
2. Little
3. Some
4. Much
5. A great deal

	None	Little	Some	Much	A great deal
57. Writing essays for a variety of purposes and audiences.	1	2	3	4	5
58. Recognizing relevant details when reading.	1	2	3	4	5
59. Preparing for oral presentations.	1	2	3	4	5
60. Sharing written products with others.	1	2	3	4	5
61. Using visual representation for a variety of purposes.	1	2	3	4	5
62. Maintaining eye contact with speaker.	1	2	3	4	5
63. Evaluating visual presentations.	1	2	3	4	5
64. Distinguishing between fact and opinion.	1	2	3	4	5
65. Using non-verbal language to express oneself in an oral presentation.	1	2	3	4	5
66. Recognizing the development of an overall theme in written work.	1	2	3	4	5
67. Asking for clarification and/or additional information from speaker.	1	2	3	4	5
68. Expanding vocabulary by determining word meanings from specialized dictionaries.	1	2	3	4	5
69. Using mass media as sources of information.	1	2	3	4	5
70. Evaluating own writing.	1	2	3	4	5
71. Constructing meaning from written text.	1	2	3	4	5

	None	Little	Some	Much	A great deal
72. Using oral language effectively in a variety of situations.	1	2	3	4	5
73. Using all parts of speech effectively in sentences.	1	2	3	4	5
74. Conveying meaning through dramatic play.	1	2	3	4	5
75. Identifying stated or implied main ideas of written work.	1	2	3	4	5
76. Proofreading written work for errors.	1	2	3	4	5

PART III:

Below are examples of integrating language arts skills into home economics content. How often do you use these examples or similar ones in your teaching?

Use the following key in determining your response.
1. Never
2. Seldom
3. Occasionally
4. Often
5. Very often

	Never	Seldom	Occasionally	Often	Very often
77. Reinforcing students' writing skills through journaling.	1	2	3	4	5
78. Having students develop a long-term project such as a newsletter on parenting.	1	2	3	4	5
79. Teaming with a language arts teacher in planning for the students application of language competencies.	1	2	3	4	5
80. Building vocabulary through an extensive glossary that accompanies a parenting unit.	1	2	3	4	5

	Never	Seldom	Occasionally	Often	Very often
81. Having students plan and carry out activities with children at a local daycare center.	1	2	3	4	5
82. Going to a language arts teacher to discuss ways in which students' language skills should be improved.	1	2	3	4	5
83. Having students publish essays on parenting topics in the school newsletter or local newspaper.	1	2	3	4	5
84. Using literature to teach a lesson on family violence and abuse.	1	2	3	4	5
85. Working with a language arts teacher in order to set up cross-curricula activities.	1	2	3	4	5
86. Using folklore from other cultures to understand diverse family structures.	1	2	3	4	5
87. Having students develop a packet of materials that can be used by adolescent parents to locate and utilize community resources.	1	2	3	4	5
88. Giving joint assignments with the language arts teacher which would fulfill course standards in both areas.	1	2	3	4	5

The following are some common barriers that could affect you in your efforts to integrate language arts into home economics. Please indicate how likely you are to encounter these barriers.

Use the following key in determining your response:
1. Very likely
2. Somewhat likely
3. Uncertain
4. Somewhat unlikely
5. Very unlikely

	Very Likely	Somewhat likely	Uncertain	Somewhat unlikely	Very Unlikely
89. Lack of planning time.	1	2	3	4	5
90. School structure that does not facilitate integration.	1	2	3	4	5
91. Lack of cooperation from the language arts teacher.	1	2	3	4	5
92. Lack of preparation to teach language arts skills.	1	2	3	4	5
93. Scheduling that does not facilitate integration.	1	2	3	4	5
94. Lack of resources to use for integrating.	1	2	3	4	5
95. Student resistance to emphasis on language arts skills in home economics.	1	2	3	4	5
96. School policies that do not allow for flexibility in course content.	1	2	3	4	5
97. Limited knowledge of integration methodology.	1	2	3	4	5
98. Parent resistance to change.	1	2	3	4	5
99. School policies that do not allow for flexibility in teaching methodology.	1	2	3	4	5

PART IV:

Please indicate the degree to which you agree or disagree with the following statements regarding integration of language arts into home economics:

Use the following categories in determining your response:
1 Strongly disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
100. Language arts concepts can be integrated into home economics courses.	1	2	3	4	5
101. Home economics teachers have the knowledge and skills to integrate language arts into home economics courses.	1	2	3	4	5
102. A project that requires students to use knowledge from several subject areas is an appropriate way of enhancing learning of home economics content.	1	2	3	4	5
103. Incorporating skills from other areas into the teaching of home economics will confuse the students.	1	2	3	4	5
104. Poetry can be used to enhance learning in home economics.	1	2	3	4	5
105. Home economics teachers are not adequately prepared to teach language arts skills to their students.	1	2	3	4	5
106. Integration of home economics and language arts cannot adequately prepare students for the world of work.	1	2	3	4	5
107. I would not feel comfortable going to a language arts teacher to discuss ways in which my students language skills could be improved.	1	2	3	4	5
108. Integrating home economics and language arts will improve the students' achievement in both home economics and language arts.	1	2	3	4	5

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
109. Home economics and language arts should be considered as separate subjects and should not be integrated.	1	2	3	4	5
110. I would be comfortable to evaluate my students' language arts skills.	1	2	3	4	5
111. Home economics provides appropriate content for the development of language skills.	1	2	3	4	5
112. The use of literature in teaching home economics will remove focus from the home economics content.	1	2	3	4	5
113. I would be willing to work with a language arts teacher to set up cross-curricula assignments for our students.	1	2	3	4	5
114. Students learn better if content from different. subjects is not mixed.	1	2	3	4	5
115. Language arts skills should be taught exclusively by language arts teachers.	1	2	3	4	5

PART V:

116. If an inservice workshop on parenting were offered, what time of year would you most prefer. **Please circle only one response.**
    1. Spring
    2. Summer
    3. Fall
    4. Winter

117. Would you like the inservice workshop to be offered at the teachers' conference in the summer?
    1. Yes
    2. No

118. What length of time would you prefer for inservice education activities? **Please circle only one.**
   1. Half a day.
   2. One day
   3. 1 1/2 to 2 days
   4. Three days
   4. One week
   6. Other (Specify) _____

119. What day of the week do you prefer? **Please circle only one response.**
   1. Monday
   2. Tuesday
   3. Wednesday
   4. Thursday
   5. Friday
   6. Saturday

120. What time of day would you prefer? **Please circle only one response.**
   1. Morning
   2. Afternoon
   3. Evening

121. In what areas would you like inservice education? **Please circle all that apply.**
   1. Parenting content
   2. Teaching strategies
   3. Subject integration
   4. Language arts
   5. None or not interested in inservice activities.

PART VI:

122. **Please provide the following information about your education.**

Degree(s)	Year Received	Institution	State	Major	Minor
_____	_____	_____	____	_____	_____
_____	_____	_____	____	_____	_____
_____	_____	_____	____	_____	_____
_____	_____	_____	____	_____	_____

123. For how many years have you taught home economics? _____

124. What licensure(s) do you hold? **Circle all that apply.**
   1. General home economics
   2. Vocational consumer and homemaking
   3. Occupational home economics
   4. Other endorsements (please specify) _____

125. At what level do you teach? **Circle all that apply.**
   1. Middle School
   2. Junior High School
   3. Senior High School

126. Gender
   1. Female
   2. Male

127. Birth year. 19_____

128. I teach
   1. Full time
   2. **Part time (Please indicate percentage).** _____%

129. What percent of your teaching assignment is in home economics? _____%

130. If your teaching assignment is not 100% in home economics, what other courses do you teach? **Please circle all that apply.**

   1. Science
   2. Math
   3. Music
   4. Business
   5. Social Studies
   6. English/Language arts
   7. Foreign language
   8. Health
   9. Physical education
   10. Other (specify)_____

THANK YOU FOR YOUR COOPERATION
Please return by May 15, 1994.

APPENDIX B: PEARSON'S PRODUCT-MOMENT CORRELATIONS

Table B.1. Pearson's product-moment correlations of variables in the path model

	Q53	Q54	Q56A	Q122B1	Q129	Q124D	AGE	Q123	Q128
Q53	1.000	.872**	.752**	.005	-.068	.168	.065	-.042	-.041
Q54		1.000	-.743**	-.049	-.051	.144	.059	-.016	-.093
Q56A			1.000	.007	-.075	.139	-.068	.028	-.061
Q122b1				1.000	.112	.056	.196*	.387**	.124
Q129					1.000	.206*	.043	.045	.091
Q124D						1.000	.063	.063	-.035
AGE							1.000	.709**	.007
Q123								1.000	.182*
Q128									1.000
Q55									
Q56B									
Q56C									
Q56D									
Q56E									
Barr									
Att									
Int									
LA									

Guide to abbreviations to Table B.1

Q53	Previous experience with integration
Q54	Years integrating
Q56A	Integrating with language arts
Q122B1	Education
Q129	Time spent teaching FCS
Q124D	Endorsements
AGE	Age
Q123	Years of teaching
Q128	Appointment status
Q55	Years school integrating
Q56B	Integrating with science
Q56C	Integrating with math
Q56D	Integrating with social studies
Q56E	Integrating with other subjects
Barr	Barriers to integration
Att	Attitudes towards integration
Int	General integration practices
LA	Language arts practices

Q55	Q56B	Q56C	Q56D	Q56E	Barr	Att	Int	LA
.888**	.775**	.847**	.588**	.202*	.064	.024	.203*	.138
.842**	-.799**	-.852**	-.579**	-.231	.054	.051	.221*	.193*
.759**	.674**	.709**	.532**	.079	.155	.177*	.262*	.193*
.028	.078	.032	.018	.009	-.025	.154	.053	-.032
-.032	.073	.103	.033	-.043	-.159	-.161	-.164	-.066
.146	.169*	.173*	-.082	-.054	-.011	.157	-.012	-.063
.066	-.032	-.024	-.078	.007	.029	-.045	.049	-.018
.002	-.027	.055	-.014	.001	-.023	-.030	-.023	-.093
-.005	-.051	-.063	-.063	.144	.173*	.111	.024	-.049
1.000	-.778**	-.785**	-.518**	-.205	.156	.068	.239**	.180*
	1.000	.856**	-.603**	.135	.134	.119	-.229**	.159
		1.000	.632**	.113	.107	.129	.209*	.152
			1.000	.146	.036	.114	.130	.074
				1.000	.064	-.003	.146	.119
					1.000	.455**	.309**	.134
						1.000	.324**	.287**
							1.000	.571**
								1.000

APPENDIX C: HUMAN SUBJECTS APPROVAL FORM

(See

Last Name of Principal Investigator WASIKE

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Checklist for Attachments and Time Schedule

The following are attached (please check):

12. [X] Letter or written statement to subjects indicating clearly:
    - —a) purpose of the research
    - —b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
    - — c) an estimate of time needed for participation in the research and the place
    - d) if applicable, location of the research activity
    - — e) how you will ensure confidentiality
    - f) in a longitudinal study, note when and how you will contact subjects later
    - g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. [ ] Consent form (if applicable)

14. [ ] Letter of approval for research from cooperating organizations or institutions (if applicable)

15. [X] Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact	Last Contact
3/28/94	9/31/94
Month / Day / Year	Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

5/15/95
Month / Day / Year

18. Signature of Departmental Executive Officer | Date | Department or Administrative Unit

Judy K. Brun | 2-22-94 | ECS Education & Studies

19. Decision of the University Human Subjects Review Committee:

X Project Approved ___ Project Not Approved ___ No Action Required

Patricia M. Keith | 3-25-94 | PMKeith

Name of Committee Chairperson | Date | Signature of Committee Chairperson

GC:1/90

APPENDIX D: CORRESPONDENCE

IOWA STATE UNIVERSITY 142
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 MacKay Hall
Ames, Iowa 50011-1120
515 294-6444
FAX 515 294-4493

May 1, 1994

teachername
schoolname
address
city state, zip

Dear Ms. name:

We are developing a parenting curriculum for use by home economics teachers. The curriculum focuses on the teaching of parenting with the integration of language arts skills. To help us determine the most appropriate content for students with whom you work, we are asking for your assistance. We invite you to participate in the needs assessment procedure for this curriculum. The data from this study will be used in the development of the new curriculum and for a Ph.D. dissertation.

Please set aside approximately 30 minutes within the next week to complete the enclosed questionnaire. The questionnaire is divided into six sections. For the first section you are requested to think about parenting content. The second to fourth parts will direct your thinking to the concept of academic and vocational integration. In the fifth part, we will specifically ask questions related to inservice activities. The sixth part consists of general questions.

We assure you that anonymity is guaranteed. The code number in the booklet is for the purpose of identifying returns, and organizing the mailing. All data will be treated as confidential. Your ideas will be greatly appreciated and will help us develop curriculum that can be used by your students. Please tape the questionnaire closed and return it via postal service. (PLEASE DO NOT staple!) If you have any questions about this study, please call or write to either one of us. Please return the booklet by **May 15, 1994.**

Thank you in advance for your assistance.

Sincerely,

Grace N. Wasike
Research Assistant

Sally K. Williams, Ph.D., C.H.E.
Professor & Project Director

IOWA STATE UNIVERSITY[43]
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 MacKay Hall
Ames, Iowa 50011-1120
515 294-6444
FAX 515 294-4493

May 18, 1994

Recently you received a questionnaire regarding a parenting-language arts integrated curriculum. Because the questionnaire has been sent to a small but representative sample, your response is very important to us and will directly affect the final curriculum product.

Thank you for the time you spent on completing the questionnaire. If you have not yet completed it, please take a few minutes to fill out the questionnaire and return it to us as soon as possible. If you did not receive the questionnaire or have misplaced it, please call us at **(515) 294-6444** and we will send one to you immediately.

Thank you again for your time and have a pleasant summer.

Sincerely,

Sally K. Williams, Ph.D., C.H.E.
Professor & Project Director

Grace N. Wasike
Research Assistant

IOWA STATE UNIVERSITY[744]
OF SCIENCE AND TECHNOLOGY

College of Family and Consumer Sciences
Department of Family and Consumer
Sciences Education and Studies
219 MacKay Hall
Ames, Iowa 50011-1120
515 294-6444
FAX 515 294-4493

June 1, 1994

«Teachername»
«Address»
«City» «State», «Zip»

Dear «Name»:

Thank you for your willingness to participate in the needs assessment procedure for a parenting-language arts integrated curriculum. As you requested over the phone, I am sending you a replacement questionnaire.

The curriculum we are developing focuses on the teaching of parenting with the integration of language arts skills. Your input is very important in determining the most appropriate content for the students with whom you work.

We urge you to complete and return the questionnaire as soon as possible. Your contribution to the process of developing the curriculum will be greatly appreciated.

Thank you in advance for your assistance.

Sincerely,

Sally K. Williams, Ph.D., C.H.E.
Professor & Project Director

Grace N. Wasike
Research Assistant